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JAPANESE PATENT OFFICE

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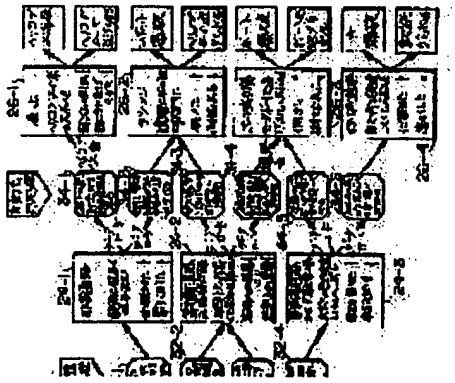
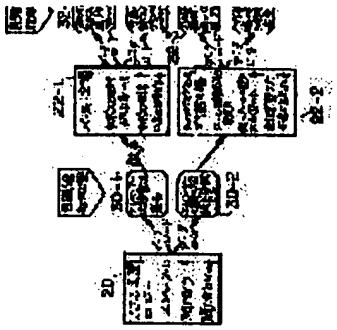
(54) **GAME APPARATUS AND INFORMATION MEMORY MEDIUM**

(57)Abstract:

PROBLEM TO BE SOLVED: To provide a game apparatus and an information memory medium which can promote a game play by a player continuously with a diversified development of the game.
SOLUTION: It is judged how a branching should be made off among game stages with a hierarchical structure based on given branching conditions. For example, to





which a branching should be made off among stages 24-2 and 24-3 corresponding to a slave node from a game stage 22-2. When the branching is made off to the game stage 24-2 or 24-3 from the game stage 22-2, automatically proceeding processing 32-3 and 32-4 is performed to automatically advance the game while the contents of the processing are mutually differentiated. In the automatically proceeding processing, the visual point and a game character are automatically shifted to a hole or an outlet as location related to a game stage corresponding to a destination of the branching and a player is given information of the game stage corresponding to the branching destination. A game stage to be branched off to is determined based on whether branching conditions are satisfied within a given time from the generation of a branching even, or based on the state of hitting a target in the branched event.

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* NOTICES *

CLAIMS

[Claim(s)]

[Claim 1] From the game stage of one in two or more game stages which are the game equipment which compounds and outputs a game picture image, and have a layered structure A means to judge to any of other game stages equivalent to the child node at the time of making the game stage of the above 1 into a parent node it branches based on given branch condition, In case it branches on a game stage besides the above from the game stage of the above 1, while processing which advances a game automatically, without being dependent on operation of a player is performed Game equipment characterized by including an automatic advance processing means to change the content of the above-mentioned processing for every game stage besides the above of a branch place, and a means to compound the game picture image containing the picture image of the above-mentioned game stage.

[Claim 2] Game equipment characterized by performing processing for which the above-mentioned automatic advance processing means is the given location in the game stage of the above 1, and at least one side of the game character which the view of a player and a player operate is automatically moved to the location relevant to a game stage besides the above of a branch place in a claim 1.

[Claim 3] Game equipment whose above-mentioned automatic advance processing means is characterized by performing processing which tells the information about a game stage besides the above of a branch place to a player in the case of automatic advance processing of a game in the claim 1 or 2.

[Claim 4] From the game stage of one in two or more game stages which are the game equipment which compounds and outputs a game picture image, and have a layered structure A means to judge to any of other game stages equivalent to the child node at the time of making the game stage of the above 1 into a parent node it branches to within a time [in a branch event / given] based on whether given branch condition was filled, Game equipment characterized by including a means to compound the game picture image containing the picture image of the above-mentioned game stage.

[Claim 5] From the game stage of one in two or more game stages which are the game equipment which compounds and outputs a game picture image, and have a layered structure A means to judge based on whether the branch condition decided [to any of other game stages equivalent to the child node at the time of making the game stage of the above 1 into a parent node it branches and] according to the hit status of the target in a branch event was filled, Game equipment characterized by including a means to compound the game picture image containing the picture image of the above-mentioned game stage.

[Claim 6] Game equipment which is the given location in the game stage of the above 1, and is characterized by displaying the location relevant to a game stage besides the above of a branch place on a player in the above-mentioned branch event in the claim 4 or 5.

[Claim 7] Game equipment characterized by including an automatic advance processing means to change the content of the above-mentioned processing for every game stage besides the above of a branch place while processing which advances a game automatically, without being dependent on operation of a player is performed in the claim 4 or either of 6, in case it branches on a game stage besides the above from the game stage of the above 1.

[Claim 8] Game equipment characterized by making the above-mentioned layered structure into the plex structure which two or more parent nodes can exist to the child node of 1 in the claim 1 or either of 7.

[Claim 9] From the game stage of one in two or more game stages which are the information storage media for compounding and outputting a game picture image, and have a layered structure The information for performing processing which judges to any of other game stages equivalent to the child node at the time of making the game stage of the above 1 into a parent node it branches based on given branch condition, In case it branches on a game stage besides the above from the game stage of the above 1, while processing which advances a game automatically, without being dependent on operation of a player is performed The information storage medium characterized by including the information for performing processing which compounds the game picture image containing the information for performing processing which changes the content of the above-mentioned processing for every game stage besides the above of a branch place, and the picture image of the above-mentioned game stage.

[Claim 10] From the game stage of one in two or more game stages which are the information storage media for compounding and outputting a game picture image, and have a layered structure To any of other game stages equivalent to the child node at the time of making the game stage of the above 1 into a parent node it branches The information storage medium characterized by including the information for performing processing which compounds the game picture image containing the information for performing processing judged to within a time [in a branch event / given] based on whether given branch condition was filled, and the picture image of the above-mentioned game stage.

[Claim 11] From the game stage of one in two or more game stages which are the information storage media for compounding and outputting a game picture image, and have a layered structure To any of other game stages equivalent to the child node at the time of making the game stage of the above 1 into a parent node it branches The information storage medium characterized by including the information for performing processing which compounds the game picture image containing the information for performing processing judged based on whether the branch condition decided according to the hit status of the target in a branch event was filled, and the picture image of the above-mentioned game stage.

[Translation done.]

* NOTICES *

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2.**** shows the word which can not be translated.
3.In the drawings, any words are not translated.

DETAILED DESCRIPTION

[Detailed Description of the Invention]
[0001]
[The technical field to which invention belongs] This invention relates to game equipment and an information storage medium.
[0002]
Background Art and Problem(s) to be Solved by the Invention] The game equipment whose player can enjoy a game by clearing a series of game stage one by one from the former is known. That is, if given stage clear conditions are filled with this game equipment in the game stage of 1, the game stage will become clear and will go to the next game stage. and the next game stage **** -- moreover, if given stage clear conditions are fulfilled, it will go to the next game stage further Thus, if a game stage is cleared one by one and all game stages are cleared, an ending display etc. will be performed and a game will be completed. thus, while a player is made to clear a series of game stage one by one, by carrying out skilled [of the game expansion created by this game stage of a series of and the story] to a player, the degree of empathy to the game of a player and the degree of enthusiasm can be boiled markedly, and can be raised
[0003] However, with the conventional game equipment, the content of a series of game stage which a player plays had become what was always decided uniquely. For this reason, once a player will clear a series of game stage, it will lose the interest that the game stage of a series of will be played again, and motivation. Therefore, there was a problem that it could not urge to the game play which the player continued.
[0004] It is in offering the game equipment which can be urged to the game play which it was made in order that this invention might solve the above technical technical probrems, and the place made into the purpose gave versatility to game expansion, and the player continued, and an information storage medium.
[0005]
[Means for Solving the Problem] In order to solve the technical probrem mentioned above, this invention is game equipment which compounds and outputs a game picture image. From the game stage of one in two or more game stages which have a layered structure A means to judge to any of other game stages equivalent to the child node at the time of making the game stage of the above 1 into a parent node it branches based on given branch condition, In case it branches on a game stage besides the above from the game stage of the above 1, while processing which advances a game automatically, without being dependent on operation of a player is performed It is characterized by including an automatic advance processing means to change the content of the above-mentioned processing for every game stage besides the above of a branch place, and a means to compound the game picture image containing the picture image of the above-mentioned game stage.
[0006] According to this invention, it is judged from the game stage of a parent node based on given branch condition whether it branches on which game stage of a child node. And it becomes that from which the content of automatic advance processing is different by the case where processing which

advances a game automatically is performed, for example, it branches on the 1st game stage at the time of this branch, and the case where it branches on the 2nd game stage. Thus, according to this invention, since the game stage is branched based on branch condition, the variety of game expansion can be increased. Moreover, since the game is automatically advanced in the case of a branch of a game stage, a smooth branch of a game stage is attained. moreover, since the content of automatic advance processing is changed for every game stage of a branch place, while flowing of the game expansion created by a series of game stage and a story is made to a natural thing, the stage effects given to a player can be boiled markedly and can be raised

[0007] Moreover, it is characterized by this invention performing processing for which the above-mentioned automatic advance processing means is the given location in the game stage of the above 1, and at least one side of the game character which the view of a player and a player operate is automatically moved to the location relevant to a game stage besides the above of a branch place.

[0008] Since the branch to the game stage will be performed after a view or the game character moves to the location relevant to the game stage of a branch place automatically if it does in this way, let branches of a game stage be smooth and a speedy thing.

[0009] Moreover, it is characterized by this invention performing processing which the above-mentioned automatic advance processing means tells to a player that the information about a game stage besides the above of a branch place is in the case of automatic advance processing of a game.

[0010] If it does in this way, a player can be told about the information about the game stage of a branch place before a branch of a game stage using a picture image or sound. A core is made to prepare the player which goes to the next game stage by this, or it becomes possible to make the feeling of an expectation hold, and ****** of a game can be doubled.

[0011] moreover, from the game stage of one in two or more game stages which this invention is game equipment which compounds and outputs a game picture image, and have a layered structure A means to judge to any of other game stages equivalent to the child node at the time of making the game stage of the above 1 into a parent node it branches to within a time [in a branch event / given] based on whether given branch condition was filled, It is characterized by including a means to compound the game picture image containing the picture image of the above-mentioned game stage.

[0012] According to this invention, while a game stage branches, it will be judged by within a time [given] based on whether given branch condition was filled whether it branches on which branch stage. thus, with it being possible to change on which game stage it branches by carrying out according to the degree of skill of a player etc., it becomes and is enabled to boil markedly the variety of the game expansion which a player can enjoy, and a story, and to increase it Moreover, by imposing the time limit, the degree of concentration to the game of a player and the degree of enthusiasm can be raised to a player.

[0013] moreover, from the game stage of one in two or more game stages which this invention is game equipment which compounds and outputs a game picture image, and have a layered structure A means to judge based on whether branch condition decided [to any of other game stages equivalent to the child node at the time of making the game stage of the above 1 into a parent node it branches and] according to the hit status of the target in a branch event was **ed, It is characterized by including a means to compound the game picture image containing the picture image of the above-mentioned game stage.

[0014] According to this invention, while a game stage branches, it will be judged based on whether the branch condition decided according to a target's hit status was filled whether it branches on which branch stage. If it does in this way, while the variety of the game expansion which a player can enjoy, and a story can be increased, it is enabled to determine the branch place of a game stage, using accuracy of shooting to the little of a mistake of a player, and a target etc. as a decision material.

[0015] Moreover, this invention is the given location in the game stage of the above 1, and is characterized by displaying the location relevant to a game stage besides the above of a branch place on a player in the above-mentioned branch event.

[0016] It enables it to suggest to a player that the game stage different from the game stage to which a player goes exists if it does in this way, and is enabled to urge to the game play of a player for the second time.
[0017] Moreover, it is characterized by this invention making the above-mentioned layered structure the plex structure which two or more parent nodes can exist to the child node of 1.
[0018] By doing in this way, though saving of image data required because of representation of a game stage and sound data is aimed at, it is enabled to increase the variety of game expansion.
[0019]
[Embodiments of the Invention] Hereafter, the example of this invention is explained using a drawing.
[0020] An example of the functional block diagram of this example is shown in drawing 1 . A control unit 12 is for a player operating a lever, a button, etc. and inputting an operation information here, and the operation information acquired by the control unit 12 is outputted to the processing section 100. The processing section 100 performs various processings of a setup in a program execution and the various modes, arrangement of a display object, etc. based on this operation information, a given program, etc., and the function is realized by hardware, such as CPU and memory. The picture image synthesis section 200 performs synthetic processing of a game picture image based on the processing result in the processing section 100, and the function is realized by hardware, such as IC only for picture image synthesis and memory or CPU, and memory. The picture image generated in the picture image synthesis section 200 is outputted to a display 10, and is displayed in a display 10.
[0021] The processing section 100 contains the basic game processing section 110 and the branch processing section 120.
[0022] The basic game processing section 110 performs fundamental game data processing, and processes moving the enemy who was made to generate a background and an enemy on a screen, or was generated, or carrying out a hit judging of the attack of a player on an enemy etc. here. On the other hand, the branch processing section 120 performs various processings about a branch of a game stage, and contains the branch condition judging section 122 and the automatic advance processing section 124.
[0023] Now, in this example, as shown in drawing 2 , the layered structure is given to the game stage. For example, when the game stage 20 is made into a parent node, the game stage 22-1 and 22-2 are arranged in the position of a child node. The game stage 24-1 and 24-2 are arranged similarly at the child node of the game stage 22-1, and the game stage 24-2 and 24-3 are arranged at the child node of the game stage 22-2. Moreover, the game stage 26-2 and 26-3 are arranged at the child node of the game stage 24-2, and the game stage 26-3 and 26-4 are arranged for the game stage 26-1 and 26-2 at the child node of the game stage 24-1 at the child node of the game stage 24-3.
[0024] And in this example, it has judged to any of the game stage of a child node it branches from the game stage of a parent node based on given branch condition. The branch condition judging section 122 of drawing 1 makes this judgment. For example, if the branch condition that it is in time for an elevator is filled in the game stage 20 as shown in drawing 2 and it will not branch and fill on the game stage 22-1, it branches on the game stage 22-2. If an inside boss is beaten and it will branch and miss on the game stage 24-1 in the game stage 22-1 similarly, it will branch on the game stage 24-2. Moreover, in the game stage 22-2, if the enemy who controls a crane is beaten, a hole is vacant in a wall with the malfunctioning of a crane and a hole will not be [it will branch on the game stage 24-2 an enemy cannot be beaten and] vacant in a wall, it branches on the game stage 24-3. The same is said of other game stages.
[0025] And it is in the point of changing the content of the processing for every game stage of the child node of a branch place while it performs processing which advances a game automatically, without being dependent on operation of a player, in case the 1st characteristic feature of this example branches on the game stage of a child node from the game stage of a parent node. The automatic advance processing section 124 of drawing 1 performs this processing. For example, as shown in drawing 2 , in case automatic advance processing 30-1 of the game character which the view of a player or a player

operates moving to the direction of an elevator automatically in case it branches on the game stage 22-1 from the game stage 20 is performed and it branches on the game stage 22-2 from the game stage 20, automatic advance processing 30-2 of moving to the direction of the stairway beside an elevator automatically is performed. Moreover, in case automatic advance processing 32-3 of moving to the location as for which the hole was vacant automatically in case it branches on the game stage 24-2 from the game stage 22-2 is performed and it branches on the game stage 24-3 from the game stage 22-2, automatic advance processing 32-4 of moving to the outlet of a dust **** place automatically is performed. Moreover, in case automatic advance processing 34-3 of moving to the car gondola for going to the next location automatically in case it branches on the game stage 26-2 from the game stage 24-2 is performed and it branches on the game stage 26-3 from the game stage 24-2, in order to escape from an explosion of a fuel tank, automatic advance processing 34-4 of moving to the elevator for emergencies automatically is performed.

[0026] Thus, while the variety of game expansion can be increased by branching a game stage according to this example, a game stage can be branched smoothly and quickly by performing automatic advance processing of a game. Consequently, while it can urge to the play which the player continued, it is enabled to offer the game equipment with which a game advances speedily.

[0027] Moreover, the 2nd characteristic feature of this example is in the point of judging any of the game stage of a child node being branched from the game stage of a parent node to within a time [in a branch event / given] based on whether given branch condition having been filled. For example, whether which of the game stage 22-1 and 22-2 makes it branch from the game stage 20 succeeds in taking an elevator, when it is judged by within a time [given] based on whether branch condition was filled and it fills to it after arrival of an elevator, and when it does not branch and fill on the game stage 22-1, it cannot take an elevator but branches on the game stage 22-2. Moreover, when were able to branch the hole which was vacant with the malfunctioning of a crane when it was judged based on whether it pushed down on within a time and the enemy who controls a crane was beaten and it is not able to be moved to passage game stage 24-2, it comes out of the outlet of a dust **** place whether which of the game stage 24-2 and 24-3 makes it branch from the game stage 22-2, and it branches on the game stage 24-3.

[0028] Thus, since the game stage of a branch place is determined as within a time based on whether branch condition was filled according to this example, it is enabled to branch a game stage automatically according to the degree of skill of a player. Thereby, an upper player can play a series of game stage which consists of the game stage 20, 22-1, 24-1, and 26-1, and can enjoy the game expansion and the story which are created by the game stage of a series of. On the other hand, a beginners' class player can play a series of game stage which consists of the game stage 20, 22-2, 24-3, and 26-4, and it is enabled to enjoy the game expansion different from an upper player, and a story. Furthermore, for example like [even if it is an elementary player, as the degree of skill goes up] the game stage 20, 22-2, 24-3, 26-3 or the game stage 20, 22-2, 24-2, 26-3 or the game stage 20, 22-2, 24-2, and 26-2, it is enabled to play a series of different game stage, and is enabled to enjoy different game expansion and a story. Thereby, versatility can be given to game expansion and it is enabled to urge to the game play which the player continued.

[0029] furthermore, according to this example, since it will play frantically when I will clear branch condition to within a time, a player can boil the degree of enthusiasm to the game of a player harder [which wants to play the game stage which has not been played until now] markedly, and can raise it to it The variety of ****** of a game can be increased by setting up branch condition apart from especially the clear conditions of a game stage.

[0030] Moreover, the 3rd characteristic feature of this example is that it judges from the game stage of a parent node based on whether the branch condition decided [any of the game stage of a child node are branched and] according to the hit status of the target in a branch event was filled. For example, from the game stage 24-2, it is based whether to have many cartridges which hit the fuel tank accidentally in the attack on the enemy who used the fuel tank as the back, or it is few whether which of the game stage

26-2 and 26-3 makes it branch, and it is judged, for example, if there are few cartridges-ed of a fuel tank than a predetermined number, it will branch on the game stage 26-2, and if it is more than a predetermined number, it

[0031] Thus, according to the example, since the game stage of a branch place is determined according to the hit status to a target, it is enabled to branch a game stage automatically according to the degree of skill of a player. The versatility of game expansion can be increased by this and it is enabled to urge to the game play which the player continued. Moreover, according to this example, it is enabled to determine the branch place of a game stage, using accuracy of shooting to the little of a mistake of a player, and a target as a decision material.

[0032] Moreover, the 4th characteristic feature of this example is that it made the layered structure of a game stage the plex structure which two or more parent nodes can exist to the child node of 1. For example, as shown in drawing 2 , two game stages 22-1 and 22-2 are provided in the parent node of the game stage 24-2. The game stage 24-1 and 24-2, the game stage 24-2, and 24-3 are similarly prepared in the game stage 26-2 and the parent node of 26-3 respectively. Thus, it is enabled to increase the versatility of game expansion, saving the number of needed game stages by making a game stage into a plex structure. For example, in drawing 2 , the configuration which makes the branch place at the time of missing an inside boss in the game stage 22-1 and a branch place when a hole is vacant in a wall in the game stage 22-2 a different game stage is also considered. However, if it is such a configuration, image data required for representation of a game stage, sound data, etc. will double. It is enabled to increase the versatility of game expansion, without according to this example, increasing most of image data required for representation of a game stage, sound data, etc., since the branch place of the game stage 22-1 and the branch place of the game stage 24-2 become the same game stage 24-2.

[0033] Next, the detailed example of an operation of this example is explained.

[0034] The flow chart for explaining branch processing on the game stage 22-2 (referring to the drawing 2) is shown in drawing 3 and the drawing 4 . If two or more enemies appear and a player adds an attack to it on a screen first, the hit judging is performed, according to the judgment result, an enemy will be killed from on a screen or making a new enemy appear etc. will be processed (step S1). The basic game processing section 110 of drawing 1 etc. performs the above processing.

[0035] Next, a branch event occurs, the enemy who controls a crane appears, and an attack is devised to a player (steps S2 and S3). And when it is judged whether it pushed down less than on within a time [given], for example, 30 seconds, and the enemy who controls a crane is beaten, it is supposed that branch condition was filled (step S4, S6), and when it does not push down, it is supposed that branch condition was not filled (step S4, S5, S10). The branch condition judging section 122 of drawing 1 makes this judgment. Although the enemy who controls a crane disappears from a screen when branch condition is filled, a crane is having operated with as and hangs up (steps S7 and S8). And a crane crashes into a wall, and as shown in drawing 5 (A), a hole 40 is vacant in a wall (step S9). On the other hand, when branch condition is not filled, as shown in drawing 6 (A), in a wall, a hole is not vacant [the enemy who controls a crane disappears from a recess screen (step S11) and].

[0036] Next, it is judged whether the enemy in this cella was annihilated, and a player adds an attack to an enemy until it is destroyed totally (steps S12 and S13 of drawing 4). If enemies are wiped out, stage clear processing will be performed, and as shown in drawing 5 (B) and the drawing 6 (B), the clear time of the game stage, the rate of a hit, etc. are displayed on a screen (step S14).

[0037] And when branch condition is filled, as shown in drawing 5 (C), processing for which the game character which the view of a player or a player operates is automatically moved to the location of a hole 40 is performed (steps S15 and S16). The automatic advance processing section 124 of drawing 1 performs this processing. And a screen is made dark in the place which displayed the door 44 which seems to be shown in drawing 5 (D) through a hole 40, and the path 46, and as shown in drawing 5 (E), the display explaining the next game stage 24-2 which is a branch place is performed. And the data of the next game stage 24-2 are read, and it branches on the next game stage 24-2 (steps S17 and S18).

[0038] On the other hand, when branch condition is not filled, as shown in drawing 6 (C), processing

which moves automatically the game character which the view of a player or a player operates to the direction of an outlet 42 is performed (steps S15 and S19). The automatic advance processing section 124 also performs this processing. And as shown in drawing 6 (D), a screen is made dark in the place which went into the path 48 from the outlet 42, and as shown in drawing 6 (E), the display explaining the next game stage 24-3 which is a branch place is performed. And the data of the next game stage 24-3 are read, and it branches on the next game stage 24-3 (steps S20 and S21).

[0039] Now, in this example, as shown in the arrow heads 50 and 52 of drawing 7 , it is the given location in the game stage 22-2, and a view or the game character is automatically moved to the location of the game stage 24-2 of a branch place, the hole 40 which is the location relevant to 24-3, and the outlet 42. It is enabled to go to the next game stage automatically, without a player operating it himself, if it does in this way. A game stage can be branched smoothly by this and it is enabled to realize speedy game expansion.

[0040] Moreover, in this example, as shown in drawing 5 (E) and the drawing 6 (E), processing which tells the game stage 24-2 of a branch place and the information about 24-3 to a player in the case of automatic advance processing of a game is performed. Before this branches on the next game stage, a core is made to prepare a player or it is enabled to raise the feeling of an expectation of a player, and it is enabled to raise much more the stage effects which a game branch gives to a player.

[0041] In addition, in this example, the player is told about the information about the game stage of a branch place not only with a picture image but with sound. For example, as shown in drawing 2 , an enemy's voice is outputted in the case of the branch to the game stage 22-1 from the game stage 20, and the sound of a HEL is outputted in the case of the branch to the game stage 26-1 from the game stage 24-1.

[0042] Moreover, in this example, it is the given location in the game stage 22-2, and the game stage 24-2 of a branch place, the hole 40 which is the location relevant to 24-3, and the outlet 42 are displayed on the player in a branch event. If it does in this way, the outlet 42 which is the location relevant to the game stage 24-3 can be displayed to the player which succeeds in pushing down the enemy of a crane on within a time, and goes to the game stage 24-2 as shown in drawing 5 (A), and it is enabled to suggest that there are other game stages to this player. And this suggestion serves as the motivation of trying a game play again, after this player clears a series of game stage, and it becomes possible [urging to the game play which the player continued by this motivation].

[0043] The flow chart for explaining branch processing on the game stage 20 (referring to the drawing 2) is shown in drawing 8 and the drawing 9 . A branch event occurs, after performing processing about the attack of a player on an occurrence of two or more enemies in other areas, and it etc. first (steps T1 and T2). In this branch event, a match is played against an enemy, a player reaching this story using an elevator 60, and the door of an elevator 60 opening it after arrival, and hiding in an obstruction 62 after that, as shown in drawing 10 (A) (steps T2 and T3).

[0044] At this time, the elevator 60 is a setup of rising on the upper story again after within a time [given], for example, 40 seconds, after arrival. And if a player annihilates the enemy in the area in these 40 seconds, it will mean that branch condition was filled and an elevator 60 will become having opened with as (steps T4, T5, T6, and T7). On the other hand, if an enemy is not wiped out in 40 seconds, it will mean that branch condition was not filled, and an elevator 60 will be closed as shown in drawing 10 (C) (steps T4, T8, and T9).

[0045] Next, if a player adds an attack to an enemy and an enemy is totally destroyed it until it is judged whether the enemy in this cella was annihilated and it is destroyed totally, stage clear processing will be performed (steps T10, T11, and T12 of drawing 9).

[0046] And when branch condition is filled, as shown in drawing 10 (B), processing for which a view or the game character is automatically moved to the direction of an elevator 60 is performed (steps T13 and T14). And after performing an explanation display of the next game stage 22-1 etc., the data of the next game stage 22-1 are read, and a game stage branches (steps T15 and T16).

[0047] On the other hand, when branch condition is not filled, as shown in drawing 10 (D), processing

which moves a view or the game character to the direction of the stairway 64 beside an elevator 60 automatically is performed (steps T13 and T17). And after performing an explanation display of the next game stage 22-2 etc., the data of the next game stage 22-2 are read, and a game stage branches (steps T18 and T19).

[0048] The flow chart for explaining branch processing on the game stage 24-2 (referring to the drawing 2) is shown in drawing 11 and the drawing 12 . A branch event occurs, after performing processing about the attack of a player on an occurrence of two or more enemies in other areas, and it etc. first (steps U1 and U2). In this branch event, an attack is received from an enemy while going to car gondola. And as shown in drawing 13 (A), the player which looked up at the attack orientation discovers the enemy 72 who uses a fuel tank 70 as the back and appears, and holds waging war with these enemies (step U3).

[0049] It means that the number of cartridges-ed to the fuel tank 70 of the cartridge which aimed at and separated from the enemy 72 here was filled from the given number (from [for example,] 10) at the parvus case, and no branch condition happens to a fuel tank 70 (steps U4, U5, U6, and U7). On the other hand, when the number of cartridges-ed to a fuel tank 70 is more than from 10, it means that branch condition was not filled, and as shown in drawing 13 (C), a fuel tank 70 becomes just before an explosion (steps U4, U8, and U9).

[0050] Next, if a player adds an attack to an enemy and an enemy is totally destroyed it until it is judged whether the enemy in this cella was annihilated and it is destroyed totally, stage clear processing will be performed (steps U10, U11, and U12 of drawing 12).

[0051] And when branch condition is filled, as shown in drawing 13 (B), processing for which a view or the game character is automatically moved to the direction of car gondola 74 is performed (steps U13 and U14). And after performing an explanation display of the next game stage 26-2 etc., the data of the next game stage 26-2 are read, and a game stage branches (steps U15 and U16).

[0052] On the other hand, when branch condition is not filled, as shown in drawing 13 (D), processing which moves a view or the game character to the direction of the elevator for emergencies 76 automatically is performed (steps U13 and U17). And after performing an explanation display of the next game stage 26-3 etc., the data of the next game stage 26-3 are read, and a game stage branches (steps U18 and U19).

[0053] Next, an example of the configuration of the hardware which can realize this example is explained using drawing 14 . With the equipment shown in this drawing, CPU1000, ROM1002, RAM1004, the information storage medium 1006, sound synthesis IC1008, picture image synthesis IC1010, and I/O Ports 1012 and 1014 are mutually connected by the system bus 1016 possible [data transmission and reception]. And a display 1018 is connected to above-mentioned picture image synthesis IC1010, a loudspeaker 1020 is connected to sound synthesis IC1008, a control apparatus 1022 is connected to I/O Port 1012, and the communication device 1024 is connected to I/O Port 1014.

[0054] The image information for the information storage medium 1006 expressing a program and a display object etc. is mainly stored, and CD-ROM, a game cassette, an IC card, DVD, MO and FD, memory, etc. are used. For example, with home video game equipment, CD-ROM, a game cassette, and DVD are used as an information storage medium which stores a game program etc. Moreover, with the game equipment for business, memory, such as ROM, is used and the information storage medium 1006 is set to ROM1002 in this case.

[0055] A control apparatus 1022 is the equipment for inputting into the mainframe of equipment the result of the decision which is equivalent to a game controller, a control panel, etc., and a player performs according to game advance.

[0056] According to the program stored in the information storage medium 1006, the system programs (initialization information on the mainframe of equipment etc.) stored in ROM1002, the signal inputted by the control apparatus 1022, CPU1000 performs control of the whole equipment and various data processing. RAM1004 is a storage means by which it is used as a working area of this CPU1000 etc., and the given content of the information storage medium 1006 or ROM1002 or the result of an

operation of CPU1000 is stored. Moreover, the data structure with logical configurations, such as table data required in order to perform branch processing, will be built on this RAM or an information storage medium.

[0057] Furthermore, sound synthesis IC1008 and picture image synthesis IC1010 are formed in this kind of equipment, and the suitable output of game sound or a game picture image can be performed now. Sound synthesis IC1008 is an integrated circuit which compounds game sound, such as effect sound and background music, based on the information memorized by the information storage medium 1006 and ROM1002, and the compounded game sound is outputted by the loudspeaker 1020. Moreover, picture image synthesis IC1010 is an integrated circuit which compounds the pixel information for outputting to a display 1018 based on the image information sent from RAM1004, ROM1002, the information storage medium 1006, etc. In addition, as a display 1018, what is called so-called head mounting display (HMD) can also be used.

[0058] Moreover, a communication device 1024 exchanges with the exterior various kinds of informations used inside game equipment, and it connects with other game equipments, and the given information according to the game program is sent and received, or it is used for sending and receiving informations, such as a game program, through a communication line etc.

[0059] And various processings in which it explained by drawing 1 , drawing 2 , drawing 5 (A), - view 7 and drawing 10 (A) - (D), the drawing 13 (A), and - (D) The information storage medium 1006 which stored the program which performs processing shown in the flow chart of drawing 3 , the drawing 4 , the drawing 8 , the drawing 9 , the drawing 11 , and the drawing 12 , CPU1000, picture image synthesis IC1010 which operates according to this program, etc. realize. In addition, CPU1000 or general-purpose DSP may perform in software processing performed by picture image synthesis IC1010, sound synthesis IC1008, etc.

[0060] The example at the time of applying this example to the game equipment for business is shown in drawing 15 (A). Seeing the game picture image projected on the display 1100, a player carries out the chuting of the enemy using the gun controller 1102, and enjoys a game. CPU, picture image synthesis IC, sound synthesis IC, etc. are mounted in the IC substrate 1106 built in equipment. and from the game stage of one in two or more game stages which have a layered structure To any of other game stages equivalent to the child node at the time of making the game stage of 1 into a parent node it branches In case it branches on other game stages from the information for judging based on given branch condition, and the game stage of 1, while processing which advances a game automatically, without being dependent on operation of a player is performed The information for changing the content of processing for every game stages of other of a branch place, Are the given location in the information for compounding the game picture image containing the picture image of a game stage, and the game stage of 1, and in the location relevant to other game stages of a branch place The information for performing processing to which at least one side of the game character which the view of a player and a player operate is moved automatically, The information for performing processing which tells the information about other game stages of a branch place to a player in the case of automatic advance processing of a game, To any of a game stage besides the above it branches from the game stage of the above 1 Whether given branch condition was filled to within a time [in a branch event / given] Or the information for judging based on whether the branch condition decided according to the hit status of the target in a branch event was filled, Are the given location in the game stage of 1, and the location relevant to other game stages of a branch place The information for making the information for displaying on a player in a branch event and the above-mentioned layered structure into the plex structure which two or more parent nodes can exist to the child node of 1 etc. is stored in the memory 1108 which is an information storage medium on the IC substrate 1106. Hereafter, these informations are called store information. These store informations contain at least one, such as the program code for performing the above-mentioned various processings, image information, a sound information, a configuration information on a display object, table data, list data, and a player information. In addition, an example of the store gestalt of the information on an information storage medium is shown in

drawing 16 .
[0061] The example at the time of applying this example to game equipment for home use is shown in drawing 15 (B). Seeing the game picture image projected on the display 1200, a player operates the game controllers 1202 and 1204 and enjoys a game. In this case, it is stored in CD-ROM1206, IC cards 1208 and 1209, etc. which are the information storage media which can detach [information / store / above-mentioned] freely to mainframe equipment.
[0062] The example at the time of applying this example is shown in the game equipment containing the terminal 1304-1 connected with the host equipment 1300 and this host equipment 1300 through a communication line 1302 in drawing 15 (C), - 1304-n. In this case, the above-mentioned store information is stored in the information storage media 1306, such as a magnetic disk unit which can control the host equipment 1300, a magnetic tape unit, and memory. The terminal 1304-1 - 1304-n have CPU, picture image synthesis IC, and sound synthesis IC, and when it is what can compound a game picture image and game sound by the stand-alone, from the host equipment 1300, the game program for compounding a game picture image and game sound etc. is delivered by the terminal 1304-1 - 1304-n. On the other hand, when uncompoundable by the stand-alone, a game picture image and game sound are compounded, and the host equipment 1300 will transmit this to the terminal 1304-1 - 1304-n, and will output in a terminal.
[0063] In addition, what [not only] was explained in the above-mentioned example but various deformation implementation is possible for this invention.
[0064] For example, although especially processing that moves a view or the game character to the location relevant to other game stages of a branch place is effective as content of automatic advance processing as drawing 7 explained, the various deformation implementation of those other than this is possible.
[0065] Moreover, although it is desirable that it is especially the plex structure which is shown in drawing 2 as for the layered structure of a game stage, considering as other structures, such as the tree structure, is also possible.
[0066] Moreover, when branching a game stage by whether given branch condition was filled to within a time [given], what [not only] was explained in the above-mentioned example but various deformation implementation is possible also for the branch condition.
[0067] Moreover, although the above-mentioned example explained the branch condition decided with the number of cartridges-ed to a fuel tank as branch condition decided according to a target's hit status, various deformation implementation, such as a rate of a hit not only to this but a target and branch condition decided by the degree of a way to remove, is possible for this invention.
[0068] Moreover, although this invention takes effect especially when it applies to the game which wins straight victories in a series of game stage, it is applicable to the various games in within the limits of the summary of this invention, such as a shooting game, an action game, and a waging-war game.
[0069] Moreover, this invention is applicable not only to home use and the game equipment for business but various game equipments, such as the large-sized attraction equipment with which a simulator and many players participate, a personal computer, and a multimedia terminal.
[0070]

[Translation done.]

* NOTICES *

MEANS

[Means for Solving the Problem] In order to solve the technical probrem mentioned above, this invention is game equipment which compounds and outputs a game picture image. From the game stage of one in two or more game stages which have a layered structure A means to judge to any of other game stages equivalent to the child node at the time of making the game stage of the above 1 into a parent node it branches based on given branch condition, In case it branches on a game stage besides the above from the game stage of the above 1, while processing which advances a game automatically, without being dependent on operation of a player is performed It is characterized by including an automatic advance processing means to change the content of the above-mentioned processing for every game stage besides the above of a branch place, and a means to compound the game picture image containing the picture image of the above-mentioned game stage.

[0006] According to this invention, it is judged from the game stage of a parent node based on given branch condition whether it branches on which game stage of a child node. And it becomes that from which the content of automatic advance processing is different by the case where processing which advances a game automatically is performed, for example, it branches on the 1st game stage at the time of this branch, and the case where it branches on the 2nd game stage. Thus, according to this invention, since the game stage is branched based on branch condition, the variety of game expansion can be increased. Moreover, since the game is automatically advanced in the case of a branch of a game stage, a smooth branch of a game stage is attained. moreover, since the content of automatic advance processing is changed for every game stage of a branch place, while flowing of the game expansion created by a series of game stage and a story is made to a natural thing, the stage effects given to a player can be boiled markedly and can be raised

[0007] Moreover, it is characterized by this invention performing processing for which the above-mentioned automatic advance processing means is the given location in the game stage of the above 1, and at least one side of the game character which the view of a player and a player operate is automatically moved to the location relevant to a game stage besides the above of a branch place.

[0008] Since the branch to the game stage will be performed after a view or the game character moves to the location relevant to the game stage of a branch place automatically if it does in this way, let branches of a game stage be smooth and a speedy thing.

[0009] Moreover, it is characterized by this invention performing processing which the above-mentioned automatic advance processing means tells to a player that the information about a game stage besides the above of a branch place is in the case of automatic advance processing of a game.

[0010] If it does in this way, a player can be told about the information about the game stage of a branch place before a branch of a game stage using a picture image or sound. A core is made to prepare the player which goes to the next game stage by this, or it becomes possible to make the feeling of an expectation hold, and ****** of a game can be doubled.

[0011] moreover, from the game stage of one in two or more game stages which this invention is game equipment which compounds and outputs a game picture image, and have a layered structure A means to judge to any of other game stages equivalent to the child node at the time of making the game stage

of the above 1 into a parent node it branches to within a time [in a branch event / given] based on whether given branch condition was filled, It is characterized by including a means to compound the game picture image containing the picture image of the above-mentioned game stage.
[0012] According to this invention, while a game stage branches, it will be judged by within a time [given] based on whether given branch condition was filled whether it branches on which branch stage. thus, with it being possible to change on which game stage it branches by carrying out according to the degree of skill of a player etc., it becomes and is enabled to boil markedly the variety of the game expansion which a player can enjoy, and a story, and to increase it Moreover, by imposing the time limit, the degree of concentration to the game of a player and the degree of enthusiasm can be raised to a player.
[0013] moreover, from the game stage of one in two or more game stages which this invention is game equipment which compounds and outputs a game picture image, and have a layered structure A means to judge based on whether branch condition decided [to any of other game stages equivalent to the child node at the time of making the game stage of the above 1 into a parent node it branches and] according to the hit status of the target in a branch event was **ed, It is characterized by including a means to compound the game picture image containing the picture image of the above-mentioned game stage.
[0014] According to this invention, while a game stage branches, it will be judged based on whether the branch condition decided according to a target's hit status was filled whether it branches on which branch stage. If it does in this way, while the variety of the game expansion which a player can enjoy, and a story can be increased, it is enabled to determine the branch place of a game stage, using accuracy of shooting to the little of a mistake of a player, and a target etc. as a decision material.
[0015] Moreover, this invention is the given location in the game stage of the above 1, and is characterized by displaying the location relevant to a game stage besides the above of a branch place on a player in the above-mentioned branch event.
[0016] It enables it to suggest to a player that the game stage different from the game stage to which a player goes exists if it does in this way, and is enabled to urge to the game play of a player for the second time.
[0017] Moreover, it is characterized by this invention making the above-mentioned layered structure the plex structure which two or more parent nodes can exist to the child node of 1.
[0018] By doing in this way, though saving of image data required because of representation of a game stage and sound data is aimed at, it is enabled to increase the variety of game expansion.
[0019]
[Embodiments of the Invention] Hereafter, the example of this invention is explained using a drawing.
[0020] An example of the functional block diagram of this example is shown in drawing 1 . A control unit 12 is for a player operating a lever, a button, etc. and inputting an operation information here, and the operation information acquired by the control unit 12 is outputted to the processing section 100. The processing section 100 performs various processings of a setup in a program execution and the various modes, arrangement of a display object, etc. based on this operation information, a given program, etc., and the function is realized by hardware, such as CPU and memory. The picture image synthesis section 200 performs synthetic processing of a game picture image based on the processing result in the processing section 100, and the function is realized by hardware, such as IC only for picture image synthesis and memory or CPU, and memory. The picture image generated in the picture image synthesis section 200 is outputted to a display 10, and is displayed in a display 10.
[0021] The processing section 100 contains the basic game processing section 110 and the branch processing section 120.
[0022] The basic game processing section 110 performs fundamental game data processing, and processes moving the enemy who was made to generate a background and an enemy on a screen, or was generated, or carrying out a hit judging of the attack of a player on an enemy etc. here. On the other hand, the branch processing section 120 performs various processings about a branch of a game stage,

and contains the branch condition judging section 122 and the automatic advance processing section 124.

[0023] Now, in this example, as shown in drawing 2 , the layered structure is given to the game stage. For example, when the game stage 20 is made into a parent node, the game stage 22-1 and 22-2 are arranged in the position of a child node. The game stage 24-1 and 24-2 are arranged similarly at the child node of the game stage 22-1, and the game stage 24-2 and 24-3 are arranged at the child node of the game stage 22-2. Moreover, the game stage 26-2 and 26-3 are arranged at the child node of the game stage 24-2, and the game stage 26-3 and 26-4 are arranged for the game stage 26-1 and 26-2 at the child node of the game stage 24-1 at the child node of the game stage 24-3.

[0024] And in this example, it has judged to any of the game stage of a child node it branches from the game stage of a parent node based on given branch condition. The branch condition judging section 122 of drawing 1 makes this judgment. For example, if the branch condition that it is in time for an elevator is filled in the game stage 20 as shown in drawing 2 and it will not branch and fill on the game stage 22-1, it branches on the game stage 22-2. If an inside boss is beaten and it will branch and miss on the game stage 24-1 in the game stage 22-1 similarly, it will branch on the game stage 24-2. Moreover, in the game stage 22-2, if the enemy who controls a crane is beaten, a hole is vacant in a wall with the malfunctioning of a crane and a hole will not be [it will branch on the game stage 24-2 an enemy cannot be beaten and] vacant in a wall, it branches on the game stage 24-3. The same is said of other game stages.

[0025] And it is in the point of changing the content of the processing for every game stage of the child node of a branch place while it performs processing which advances a game automatically, without being dependent on operation of a player, in case the 1st characteristic feature of this example branches on the game stage of a child node from the game stage of a parent node. The automatic advance processing section 124 of drawing 1 performs this processing. For example, as shown in drawing 2 , in case automatic advance processing 30-1 of the game character which the view of a player or a player operates moving to the direction of an elevator automatically in case it branches on the game stage 22-1 from the game stage 20 is performed and it branches on the game stage 22-2 from the game stage 20, automatic advance processing 30-2 of moving to the direction of the stairway beside an elevator automatically is performed. Moreover, in case automatic advance processing 32-3 of moving to the location as for which the hole was vacant automatically in case it branches on the game stage 24-2 from the game stage 22-2 is performed and it branches on the game stage 24-3 from the game stage 22-2, automatic advance processing 32-4 of moving to the outlet of a dust **** place automatically is performed. Moreover, in case automatic advance processing 34-3 of moving to the car gondola for going to the next location automatically in case it branches on the game stage 26-2 from the game stage 24-2 is performed and it branches on the game stage 26-3 from the game stage 24-2, in order to escape from an explosion of a fuel tank, automatic advance processing 34-4 of moving to the elevator for emergencies automatically is performed.

[0026] Thus, while the variety of game expansion can be increased by branching a game stage according to this example, a game stage can be branched smoothly and quickly by performing automatic advance processing of a game. Consequently, while it can urge to the play which the player continued, it is enabled to offer the game equipment with which a game advances speedily.

[0027] Moreover, the 2nd characteristic feature of this example is in the point of judging any of the game stage of a child node being branched from the game stage of a parent node to within a time [in a branch event / given] based on whether given branch condition having been filled. For example, whether which of the game stage 22-1 and 22-2 makes it branch from the game stage 20 succeeds in taking an elevator, when it is judged by within a time [given] based on whether branch condition was filled and it fills to it after arrival of an elevator, and when it does not branch and fill on the game stage 22-1, it cannot take an elevator but branches on the game stage 22-2. Moreover, when were able to branch the hole which was vacant with the malfunctioning of a crane when it was judged based on whether it pushed down on within a time and the enemy who controls a crane was beaten and it is not

able to be moved to passage game stage 24-2, it comes out of the outlet of a dust **** place whether which of the game stage 24-2 and 24-3 makes it branch from the game stage 22-2, and it branches on the game stage 24-3.

[0028] Thus, since the game stage of a branch place is determined as within a time based on whether branch condition was filled according to this example, it is enabled to branch a game stage automatically according to the degree of skill of a player. Thereby, an upper player can play a series of game stage which consists of the game stage 20, 22-1, 24-1, and 26-1, and can enjoy the game expansion and the story which are created by the game stage of a series of. On the other hand, a beginners' class player can play a series of game stage which consists of the game stage 20, 22-2, 24-3, and 26-4, and it is enabled to enjoy the game expansion different from an upper player, and a story. Furthermore, for example like [even if it is an elementary player, as the degree of skill goes up] the game stage 20, 22-2, 24-3, 26-3 or the game stage 20, 22-2, 24-2, 26-3 or the game stage 20, 22-2, 24-2, and 26-2, it is enabled to play a series of different game stage, and is enabled to enjoy different game expansion and a story. Thereby, versatility can be given to game expansion and it is enabled to urge to the game play which the player continued.

[0029] furthermore, according to this example, since it will play frantically when I will clear branch condition to within a time, a player can boil the degree of enthusiasm to the game of a player harder [which wants to play the game stage which has not been played until now] markedly, and can raise it to it The variety of ****** of a game can be increased by setting up branch condition apart from especially the clear conditions of a game stage.

[0030] Moreover, the 3rd characteristic feature of this example is that it judges from the game stage of a parent node based on whether the branch condition decided [any of the game stage of a child node are branched and] according to the hit status of the target in a branch event was filled. For example, from the game stage 24-2, it is based whether to have many cartridges which hit the fuel tank accidentally in the attack on the enemy who used the fuel tank as the back, or it is few whether which of the game stage 26-2 and 26-3 makes it branch, and it is judged, for example, if there are few cartridges-ed of a fuel tank than a predetermined number, it will branch on the game stage 26-2, and if it is more than a predetermined number, it

[0031] Thus, according to the example, since the game stage of a branch place is determined according to the hit status to a target, it is enabled to branch a game stage automatically according to the degree of skill of a player. The versatility of game expansion can be increased by this and it is enabled to urge to the game play which the player continued. Moreover, according to this example, it is enabled to determine the branch place of a game stage, using accuracy of shooting to the little of a mistake of a player, and a target as a decision material.

[0032] Moreover, the 4th characteristic feature of this example is that it made the layered structure of a game stage the plex structure which two or more parent nodes can exist to the child node of 1. For example, as shown in drawing 2 , two game stages 22-1 and 22-2 are provided in the parent node of the game stage 24-2. The game stage 24-1 and 24-2, the game stage 24-2, and 24-3 are similarly prepared in the game stage 26-2 and the parent node of 26-3 respectively. Thus, it is enabled to increase the versatility of game expansion, saving the number of needed game stages by making a game stage into a plex structure. For example, in drawing 2 , the configuration which makes the branch place at the time of missing an inside boss in the game stage 22-1 and a branch place when a hole is vacant in a wall in the game stage 22-2 a different game stage is also considered. However, if it is such a configuration, image data required for representation of a game stage, sound data, etc. will double. It is enabled to increase the versatility of game expansion, without according to this example, increasing most of image data required for representation of a game stage, sound data, etc., since the branch place of the game stage 22-1 and the branch place of the game stage 24-2 become the same game stage 24-2.

[0033] Next, the detailed example of an operation of this example is explained.

[0034] The flow chart for explaining branch processing on the game stage 22-2 (referring to the drawing 2) is shown in drawing 3 and the drawing 4 . If two or more enemies appear and a player adds

an attack to it on a screen first, the hit judging is performed, according to the judgment result, an enemy will be killed from on a screen or making a new enemy appear etc. will be processed (step S1). The basic game processing section 110 of drawing 1 etc. performs the above processing.
[0035] Next, a branch event occurs, the enemy who controls a crane appears, and an attack is devised to a player (steps S2 and S3). And when it is judged whether it pushed down less than on within a time [given], for example, 30 seconds, and the enemy who controls a crane is beaten, it is supposed that branch condition was filled (step S4, S6), and when it does not push down, it is supposed that branch condition was not filled (step S4, S5, S10). The branch condition judging section 122 of drawing 1 makes this judgment. Although the enemy who controls a crane disappears from a screen when branch condition is filled, a crane is having operated with as and hangs up (steps S7 and S8). And a crane crashes into a wall, and as shown in drawing 5 (A), a hole 40 is vacant in a wall (step S9). On the other hand, when branch condition is not filled, as shown in drawing 6 (A), in a wall, a hole is not vacant [the enemy who controls a crane disappears from a recess screen (step S11) and].
[0036] Next, it is judged whether the enemy in this cella was annihilated, and a player adds an attack to an enemy until it is destroyed totally (steps S12 and S13 of drawing 4). If enemies are wiped out, stage clear processing will be performed, and as shown in drawing 5 (B) and the drawing 6 (B), the clear time of the game stage, the rate of a hit, etc. are displayed on a screen (step S14).
[0037] And when branch condition is filled, as shown in drawing 5 (C), processing for which the game character which the view of a player or a player operates is automatically moved to the location of a hole 40 is performed (steps S15 and S16). The automatic advance processing section 124 of drawing 1 performs this processing. And a screen is made dark in the place which displayed the door 44 which seems to be shown in drawing 5 (D) through a hole 40, and the path 46, and as shown in drawing 5 (E), the display explaining the next game stage 24-2 which is a branch place is performed. And the data of the next game stage 24-2 are read, and it branches on the next game stage 24-2 (steps S17 and S18).
[0038] On the other hand, when branch condition is not filled, as shown in drawing 6 (C), processing which moves automatically the game character which the view of a player or a player operates to the direction of an outlet 42 is performed (steps S15 and S19). The automatic advance processing section 124 also performs this processing. And as shown in drawing 6 (D), a screen is made dark in the place which went into the path 48 from the outlet 42, and as shown in drawing 6 (E), the display explaining the next game stage 24-3 which is a branch place is performed. And the data of the next game stage 24-3 are read, and it branches on the next game stage 24-3 (steps S20 and S21).
[0039] Now, in this example, as shown in the arrow heads 50 and 52 of drawing 7 , it is the given location in the game stage 22-2, and a view or the game character is automatically moved to the location of the game stage 24-2 of a branch place, the hole 40 which is the location relevant to 24-3, and the outlet 42. It is enabled to go to the next game stage automatically, without a player operating it himself, if it does in this way. A game stage can be branched smoothly by this and it is enabled to realize speedy game expansion.
[0040] Moreover, in this example, as shown in drawing 5 (E) and the drawing 6 (E), processing which tells the game stage 24-2 of a branch place and the information about 24-3 to a player in the case of automatic advance processing of a game is performed. Before this branches on the next game stage, a core is made to prepare a player or it is enabled to raise the feeling of an expectation of a player, and it is enabled to raise much more the stage effects which a game branch gives to a player.
[0041] In addition, in this example, the player is told about the information about the game stage of a branch place not only with a picture image but with sound. For example, as shown in drawing 2 , an enemy's voice is outputted in the case of the branch to the game stage 22-1 from the game stage 20, and the sound of a HEL is outputted in the case of the branch to the game stage 26-1 from the game stage 24-1.
[0042] Moreover, in this example, it is the given location in the game stage 22-2, and the game stage 24-2 of a branch place, the hole 40 which is the location relevant to 24-3, and the outlet 42 are displayed on the player in a branch event. If it does in this way, the outlet 42 which is the location

relevant to the game stage 24-3 can be displayed to the player which succeeds in pushing down the enemy of a crane on within a time, and goes to the game stage 24-2 as shown in drawing 5 (A), and it is enabled to suggest that there are other game stages to this player. And this suggestion serves as the motivation of trying a game play again, after this player clears a series of game stage, and it becomes possible [urging to the game play which the player continued by this motivation].

[0043] The flow chart for explaining branch processing on the game stage 20 (referring to the drawing 2) is shown in drawing 8 and the drawing 9 . A branch event occurs, after performing processing about the attack of a player on an occurrence of two or more enemies in other areas, and it etc. first (steps T1 and T2). In this branch event, a match is played against an enemy, a player reaching this story using an elevator 60, and the door of an elevator 60 opening it after arrival, and hiding in an obstruction 62 after that, as shown in drawing 10 (A) (steps T2 and T3).

[0044] At this time, the elevator 60 is a setup of rising on the upper story again after within a time [given], for example, 40 seconds, after arrival. And if a player annihilates the enemy in the area in these 40 seconds, it will mean that branch condition was filled and an elevator 60 will become having opened with as (steps T4, T5, T6, and T7). On the other hand, if an enemy is not wiped out in 40 seconds, it will mean that branch condition was not filled, and an elevator 60 will be closed as shown in drawing 10 (C) (steps T4, T8, and T9).

[0045] Next, if a player adds an attack to an enemy and an enemy is totally destroyed it until it is judged whether the enemy in this cella was annihilated and it is destroyed totally, stage clear processing will be performed (steps T10, T11, and T12 of drawing 9).

[0046] And when branch condition is filled, as shown in drawing 10 (B), processing for which a view or the game character is automatically moved to the direction of an elevator 60 is performed (steps T13 and T14). And after performing an explanation display of the next game stage 22-1 etc., the data of the next game stage 22-1 are read, and a game stage branches (steps T15 and T16).

[0047] On the other hand, when branch condition is not filled, as shown in drawing 10 (D), processing which moves a view or the game character to the direction of the stairway 64 beside an elevator 60 automatically is performed (steps T13 and T17). And after performing an explanation display of the next game stage 22-2 etc., the data of the next game stage 22-2 are read, and a game stage branches (steps T18 and T19).

[0048] The flow chart for explaining branch processing on the game stage 24-2 (referring to the drawing 2) is shown in drawing 11 and the drawing 12 . A branch event occurs, after performing processing about the attack of a player on an occurrence of two or more enemies in other areas, and it etc. first (steps U1 and U2). In this branch event, an attack is received from an enemy while going to car gondola. And as shown in drawing 13 (A), the player which looked up at the attack orientation discovers the enemy 72 who uses a fuel tank 70 as the back and appears, and holds waging war with these enemies (step U3).

[0049] It means that the number of cartridges-ed to the fuel tank 70 of the cartridge which aimed at and separated from the enemy 72 here was filled from the given number (from [for example,] 10) at the parvus case, and no branch condition happens to a fuel tank 70 (steps U4, U5, U6, and U7). On the other hand, when the number of cartridges-ed to a fuel tank 70 is more than from 10, it means that branch condition was not filled, and as shown in drawing 13 (C), a fuel tank 70 becomes just before an explosion (steps U4, U8, and U9).

[0050] Next, if a player adds an attack to an enemy and an enemy is totally destroyed it until it is judged whether the enemy in this cella was annihilated and it is destroyed totally, stage clear processing will be performed (steps U10, U11, and U12 of drawing 12).

[0051] And when branch condition is filled, as shown in drawing 13 (B), processing for which a view or the game character is automatically moved to the direction of car gondola 74 is performed (steps U13 and U14). And after performing an explanation display of the next game stage 26-2 etc., the data of the next game stage 26-2 are read, and a game stage branches (steps U15 and U16).

[0052] On the other hand, when branch condition is not filled, as shown in drawing 13 (D), processing

which moves a view or the game character to the direction of the elevator for emergencies 76 automatically is performed (steps U13 and U17). And after performing an explanation display of the next game stage 26-3 etc., the data of the next game stage 26-3 are read, and a game stage branches (steps U18 and U19).

[0053] Next, an example of the configuration of the hardware which can realize this example is explained using drawing 14 . With the equipment shown in this drawing, CPU1000, ROM1002, RAM1004, the information storage medium 1006, sound synthesis IC1008, picture image synthesis IC1010, and I/O Ports 1012 and 1014 are mutually connected by the system bus 1016 possible [data transmission and reception]. And a display 1018 is connected to above-mentioned picture image synthesis IC1010, a loudspeaker 1020 is connected to sound synthesis IC1008, a control apparatus 1022 is connected to I/O Port 1012, and the communication device 1024 is connected to I/O Port 1014.

[0054] The image information for the information storage medium 1006 expressing a program and a display object etc. is mainly stored, and CD-ROM, a game cassette, an IC card, DVD, MO and FD, memory, etc. are used. For example, with home video game equipment, CD-ROM, a game cassette, and DVD are used as an information storage medium which stores a game program etc. Moreover, with the game equipment for business, memory, such as ROM, is used and the information storage medium 1006 is set to ROM1002 in this case.

[0055] A control apparatus 1022 is the equipment for inputting into the mainframe of equipment the result of the decision which is equivalent to a game controller, a control panel, etc., and a player performs according to game advance.

[0056] According to the program stored in the information storage medium 1006, the system programs (initialization information on the mainframe of equipment etc.) stored in ROM1002, the signal inputted by the control apparatus 1022, CPU1000 performs control of the whole equipment and various data processing. RAM1004 is a storage means by which it is used as a working area of this CPU1000 etc., and the given content of the information storage medium 1006 or ROM1002 or the result of an operation of CPU1000 is stored. Moreover, the data structure with logical configurations, such as table data required in order to perform branch processing, will be built on this RAM or an information storage medium.

[0057] Furthermore, sound synthesis IC1008 and picture image synthesis IC1010 are formed in this kind of equipment, and the suitable output of game sound or a game picture image can be performed now. Sound synthesis IC1008 is an integrated circuit which compounds game sound, such as effect sound and background music, based on the information memorized by the information storage medium 1006 and ROM1002, and the compounded game sound is outputted by the loudspeaker 1020. Moreover, picture image synthesis IC1010 is an integrated circuit which compounds the pixel information for outputting to a display 1018 based on the image information sent from RAM1004, ROM1002, the information storage medium 1006, etc. In addition, as a display 1018, what is called so-called head mounting display (HMD) can also be used.

[0058] Moreover, a communication device 1024 exchanges with the exterior various kinds of informations used inside game equipment, and it connects with other game equipments, and the given information according to the game program is sent and received, or it is used for sending and receiving informations, such as a game program, through a communication line etc.

[0059] And various processings in which it explained by drawing 1 , drawing 2 , drawing 5 (A), - view 7 and drawing 10 (A) - (D), the drawing 13 (A), and - (D) The information storage medium 1006 which stored the program which performs processing shown in the flow chart of drawing 3 , the drawing 4 , the drawing 8 , the drawing 9 , the drawing 11 , and the drawing 12 , CPU1000, picture image synthesis IC1010 which operates according to this program, etc. realize. In addition, CPU1000 or general-purpose DSP may perform in software processing performed by picture image synthesis IC1010, sound synthesis IC1008, etc.

[0060] The example at the time of applying this example to the game equipment for business is shown in drawing 15 (A). Seeing the game picture image projected on the display 1100, a player carries out the

chuting of the enemy using the gun controller 1102, and enjoys a game. CPU, picture image synthesis IC, sound synthesis IC, etc. are mounted in the IC substrate 1106 built in equipment. and from the game stage of one in two or more game stages which have a layered structure To any of other game stages equivalent to the child node at the time of making the game stage of 1 into a parent node it branches In case it branches on other game stages from the information for judging based on given branch condition, and the game stage of 1, while processing which advances a game automatically, without being dependent on operation of a player is performed The information for changing the content of processing for every game stages of other of a branch place, Are the given location in the information for compounding the game picture image containing the picture image of a game stage, and the game stage of 1, and in the location relevant to other game stages of a branch place The information for performing processing to which at least one side of the game character which the view of a player and a player operate is moved automatically, The information for performing processing which tells the information about other game stages of a branch place to a player in the case of automatic advance processing of a game, To any of a game stage besides the above it branches from the game stage of the above 1 Whether given branch condition was filled to within a time [in a branch event / given] Or the information for judging based on whether the branch condition decided according to the hit status of the target in a branch event was filled, Are the given location in the game stage of 1, and the location relevant to other game stages of a branch place The information for making the information for displaying on a player in a branch event and the above-mentioned layered structure into the plex structure which two or more parent nodes can exist to the child node of 1 etc. is stored in the memory 1108 which is an information storage medium on the IC substrate 1106. Hereafter, these informations are called store information. These store informations contain at least one, such as the program code for performing the above-mentioned various processings, image information, a sound information, a configuration information on a display object, table data, list data, and a player information. In addition, an example of the store gestalt of the information on an information storage medium is shown in drawing 16 .

[0061] The example at the time of applying this example to game equipment for home use is shown in drawing 15 (B). Seeing the game picture image projected on the display 1200, a player operates the game controllers 1202 and 1204 and enjoys a game. In this case, it is stored in CD-ROM1206, IC cards 1208 and 1209, etc. which are the information storage media which can detach [information / store / above-mentioned] freely to mainframe equipment.

[0062] The example at the time of applying this example is shown in the game equipment containing the terminal 1304-1 connected with the host equipment 1300 and this host equipment 1300 through a communication line 1302 in drawing 15 (C), - 1304-n. In this case, the above-mentioned store information is stored in the information storage media 1306, such as a magnetic disk unit which can control the host equipment 1300, a magnetic tape unit, and memory. The terminal 1304-1 - 1304-n have CPU, picture image synthesis IC, and sound synthesis IC, and when it is what can compound a game picture image and game sound by the stand-alone, from the host equipment 1300, the game program for compounding a game picture image and game sound etc. is delivered by the terminal 1304-1 - 1304-n. On the other hand, when uncompoundable by the stand-alone, a game picture image and game sound are compounded, and the host equipment 1300 will transmit this to the terminal 1304-1 - 1304-n, and will output in a terminal.

[0063] In addition, what [not only] was explained in the above-mentioned example but various deformation implementation is possible for this invention.

[0064] For example, although especially processing that moves a view or the game character to the location relevant to other game stages of a branch place is effective as content of automatic advance processing as drawing 7 explained, the various deformation implementation of those other than this is possible.

[0065] Moreover, although it is desirable that it is especially the plex structure which is shown in drawing 2 as for the layered structure of a game stage, considering as other structures, such as the tree

structure, is also possible.

[0066] Moreover, when branching a game stage by whether given branch condition was filled to within a time [given], what [not only] was explained in the above-mentioned example but various deformation implementation is possible also for the branch condition.

[0067] Moreover, although the above-mentioned example explained the branch condition decided with the number of cartridges-ed to a fuel tank as branch condition decided according to a target's hit status, various deformation implementation, such as a rate of a hit not only to this but a target and branch condition decided by the degree of a way to remove, is possible for this invention.

[0068] Moreover, although this invention takes effect especially when it applies to the game which wins straight victories in a series of game stage, it is applicable to the various games in within the limits of the summary of this invention, such as a shooting game, an action game, and a waging-war game.

[0069] Moreover, this invention is applicable not only to home use and the game equipment for business but various game equipments, such as the large-sized attraction equipment with which a simulator and many players participate, a personal computer, and a multimedia terminal.

[Translation done.]

* NOTICES *

1.This document has been translated by computer. So the translation may not reflect the original precisely.
2.**** shows the word which can not be translated.
3.In the drawings, any words are not translated.

DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]
[Drawing 1] It is an example of the functional block diagram of this example.
[Drawing 2] It is drawing for explaining the layered structure of a game stage.
[Drawing 3] It is a flow chart for explaining an example of an operation of this example.
[Drawing 4] It is a flow chart for explaining an example of an operation of this example.
[Drawing 5] Drawing 5 (A) - (E) is an example of the game picture image compounded by this example, when branch condition is filled.
[Drawing 6] Drawing 6 (A) - (E) is an example of the game picture image compounded by this example, when branch condition is not filled.
[Drawing 7] It is drawing for explaining an automatic move of the view in a game stage, and the game character.
[Drawing 8] It is a flow chart for explaining an example of an operation of this example.
[Drawing 9] It is a flow chart for explaining an example of an operation of this example.
[Drawing 10] Drawing 10 (A) - (D) is an example of the game picture image compounded by this example.
[Drawing 11] It is a flow chart for explaining an example of an operation of this example.
[Drawing 12] It is a flow chart for explaining an example of an operation of this example.
[Drawing 13] Drawing 13 (A) - (D) is an example of the game picture image compounded by this example.
[Drawing 14] It is drawing showing an example of the configuration of the hardware which realizes this example.
[Drawing 15] Drawing 15 (A), (B), and (C) are drawings showing the equipment of various gestalt with which this example is applied.
[Drawing 16] It is drawing showing the example of the store gestalt of the information on an information storage medium.
[Description of Notations]
10 Display
12 Control Unit
100 Processing Section
110 Basic Game Processing Section
120 Branch Processing Section
122 Branch Condition Judging Section
124 Automatic Advance Processing Section
200 Picture Image Synthesis Section

[Translation done.]

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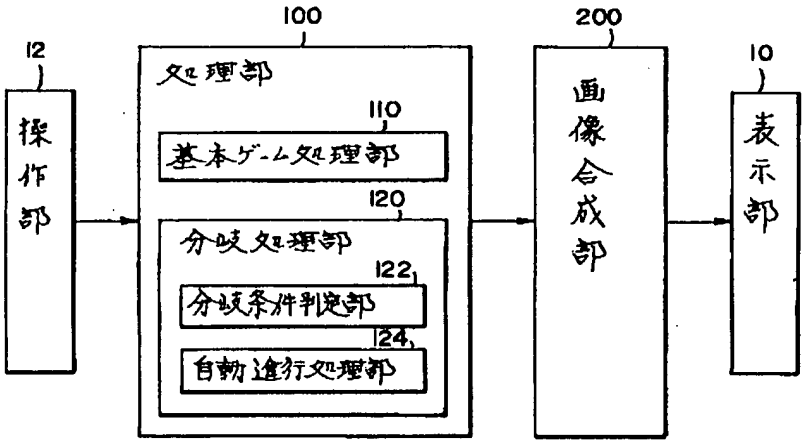
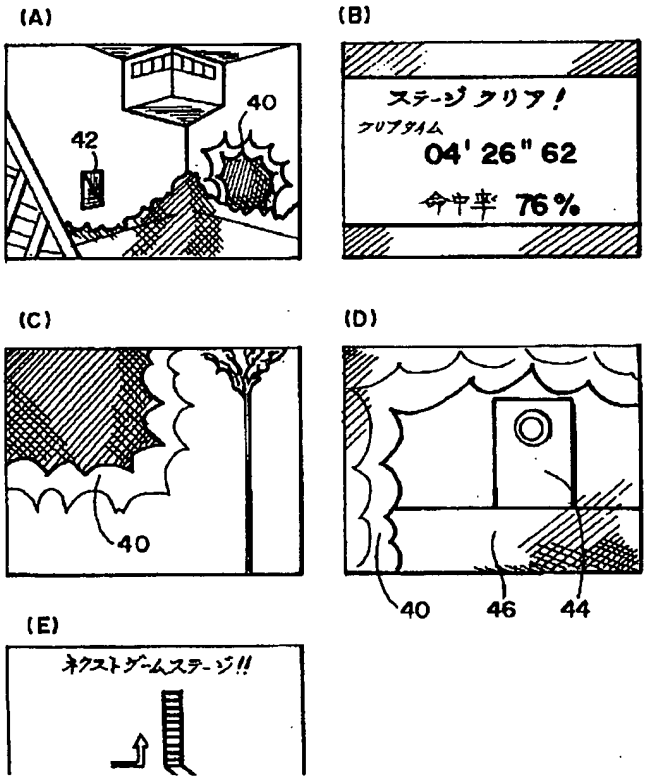
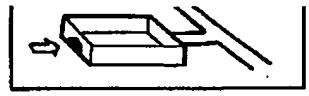
DRAWINGS

[Drawing 1]

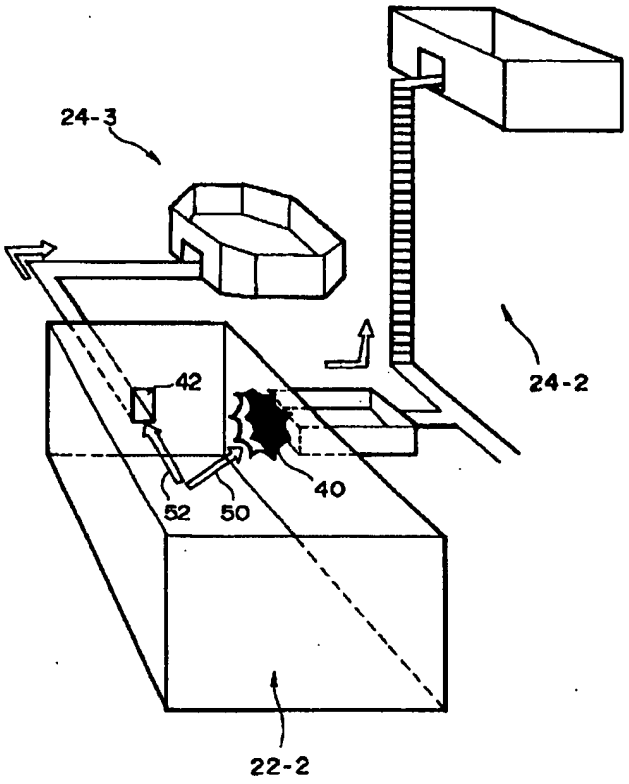


[Drawing 5]

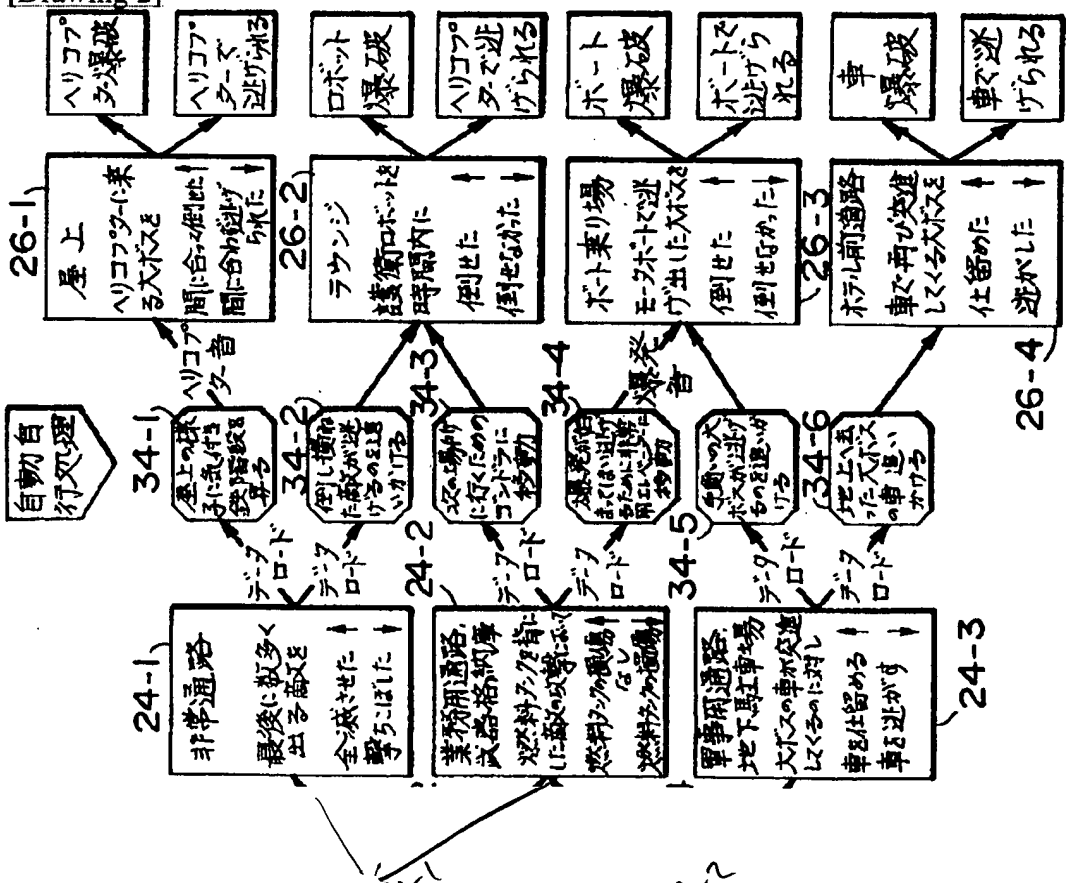


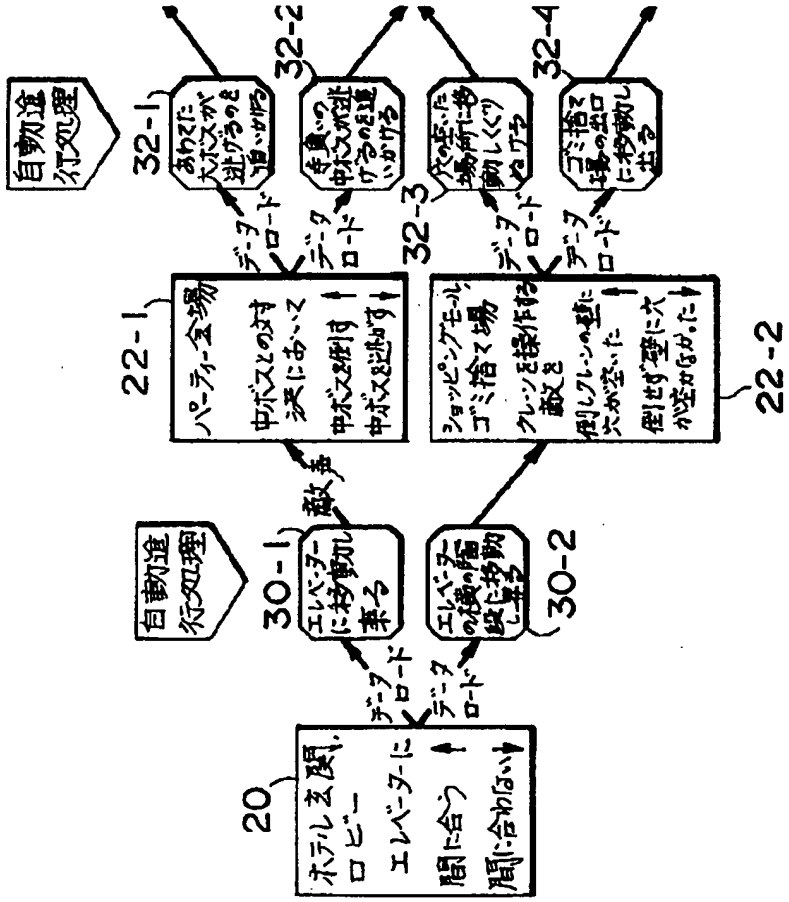


[Drawing 7]

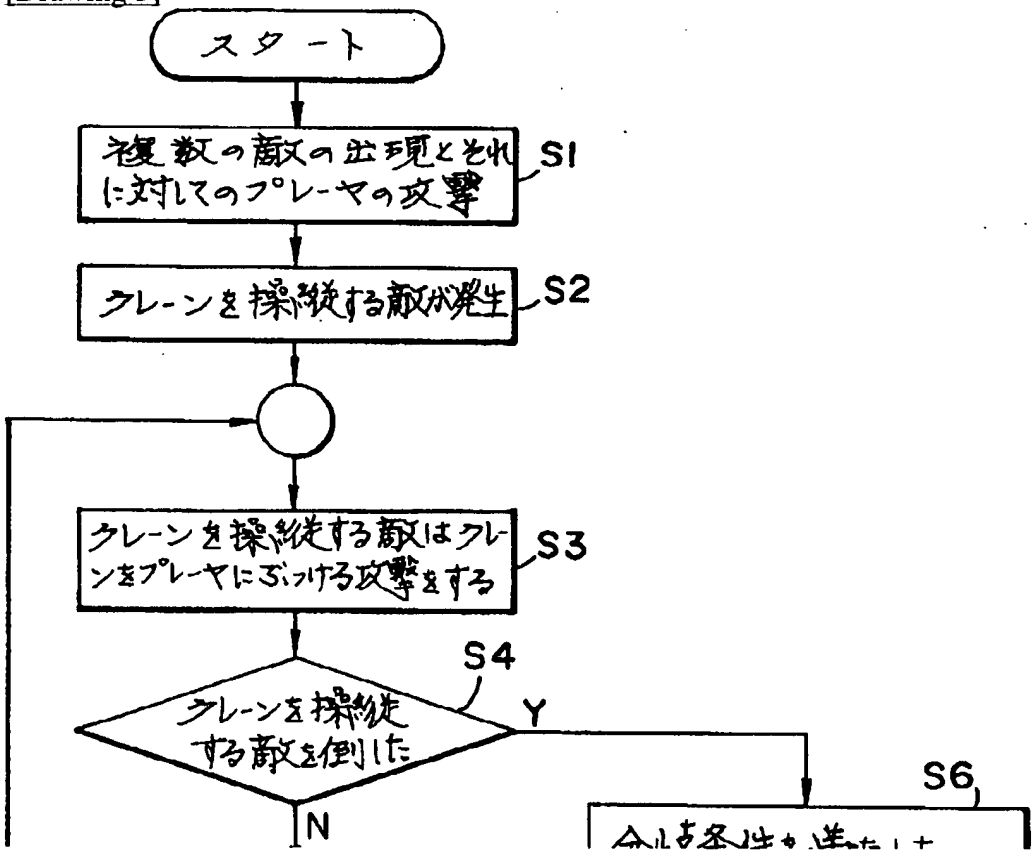


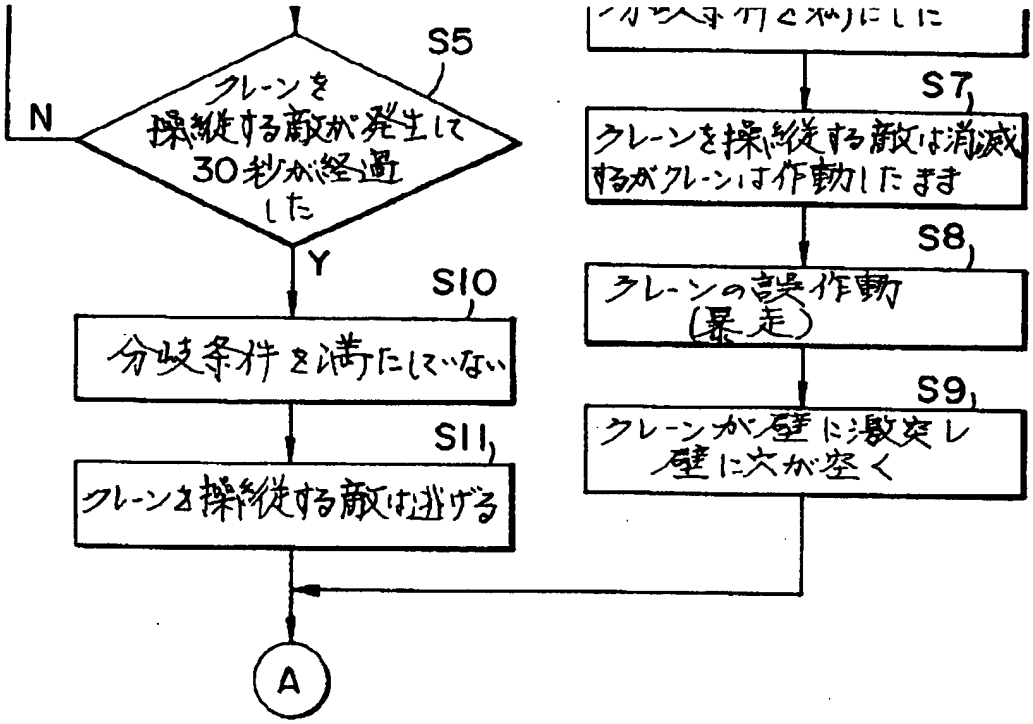
[Drawing 2]



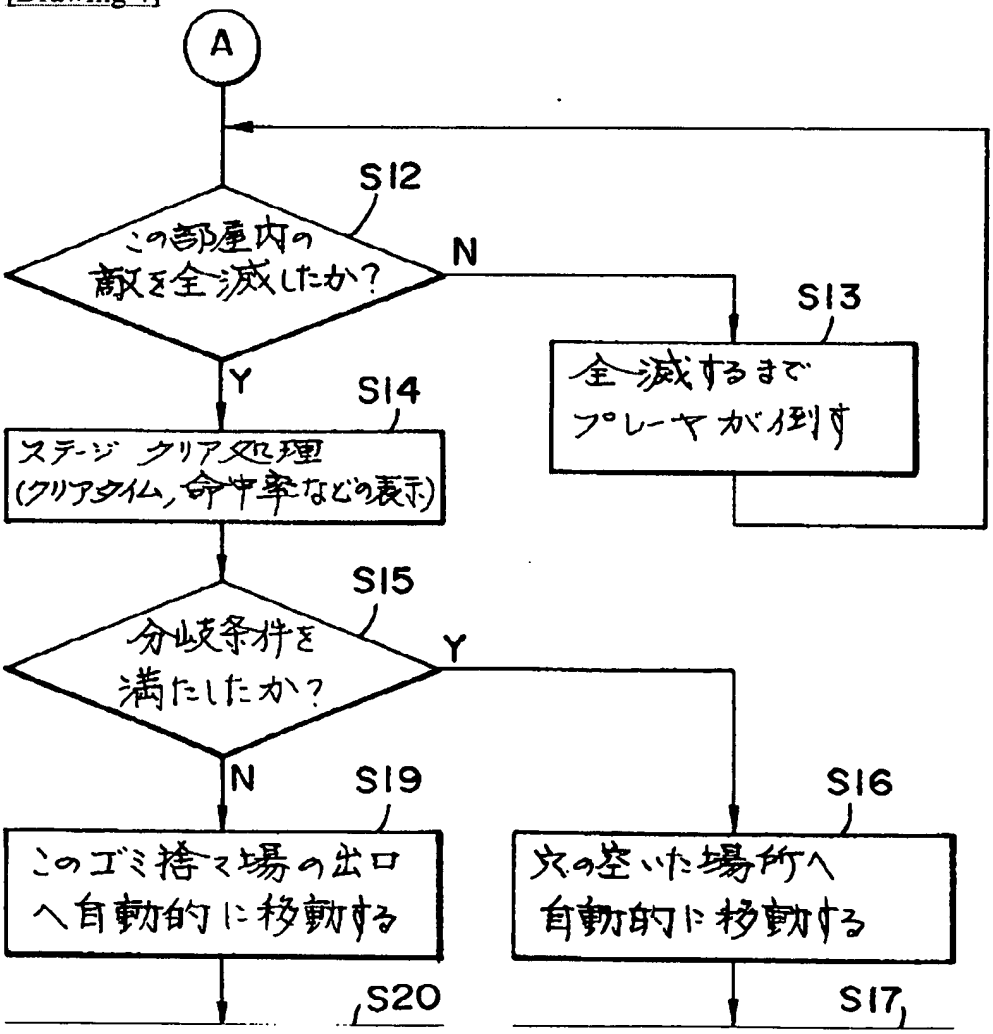

自動進行処理
32-1
32-2
32-3
32-4
データロード
22-1
22-2
敵声
30-1
30-2
20

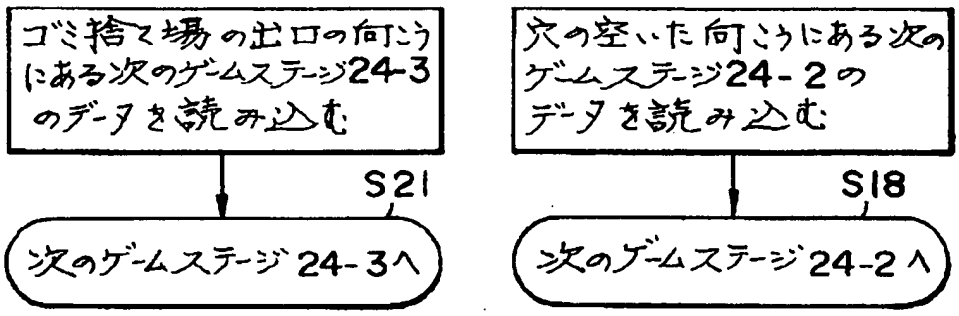
[Drawing 3]


スタート
S1
S2
S3
S4
Y
N
S6

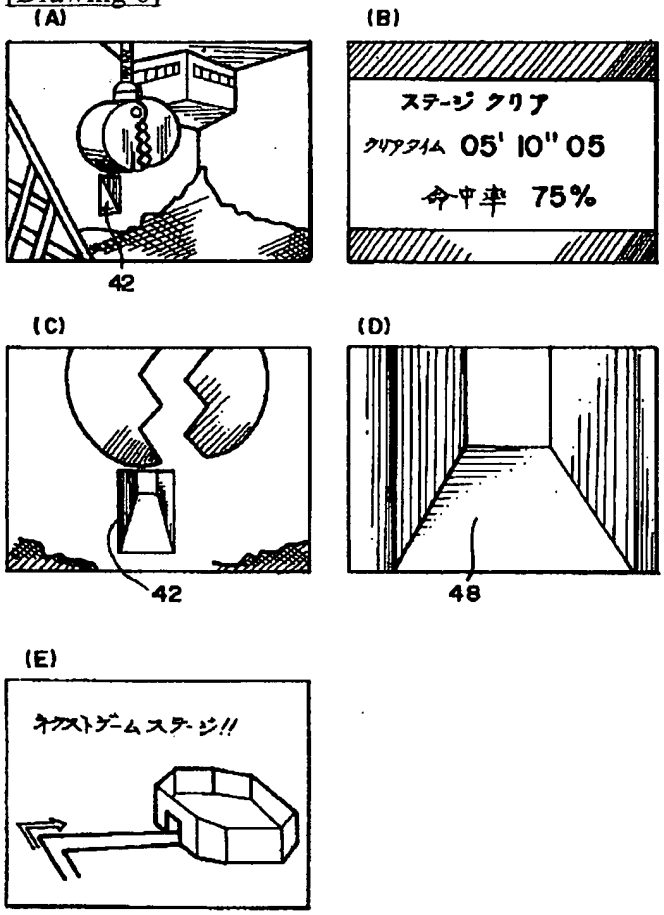

S5
クレーンを操縦する敵が発生して30秒が経過した
N
Y
S10
分岐条件を満たしていない
S11
クレーンを操縦する敵は逃げる
S7
クレーンを操縦する敵は消滅するがクレーンは作動したまま
S8
クレーンの誤作動(暴走)
S9
クレーンが壁に激突し壁に穴が空く
A

[Drawing 4]

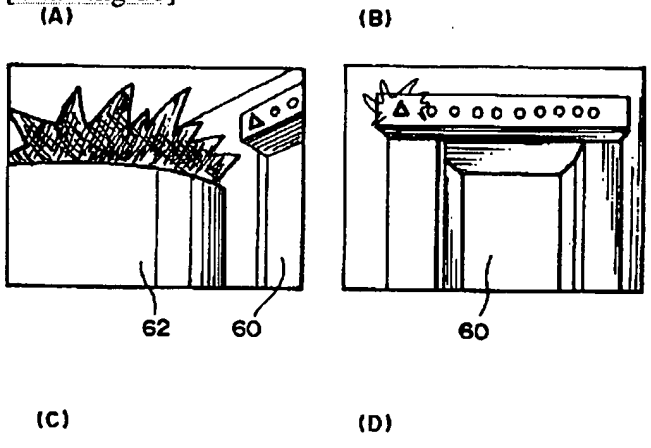

A
S12
この部屋内の敵を全滅したか?
N
Y
S13
全滅するまでプレーヤが倒す
S14
ステージクリア処理(クリアタイム,命中率などの表示)
S15
分岐条件を満たしたか?
Y
N
S19
このゴミ捨て場の出口へ自動的に移動する
S20
S16
穴の空いた場所へ自動的に移動する
S17

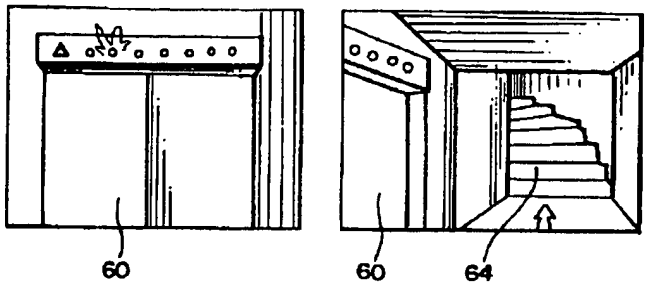


[Drawing 6]

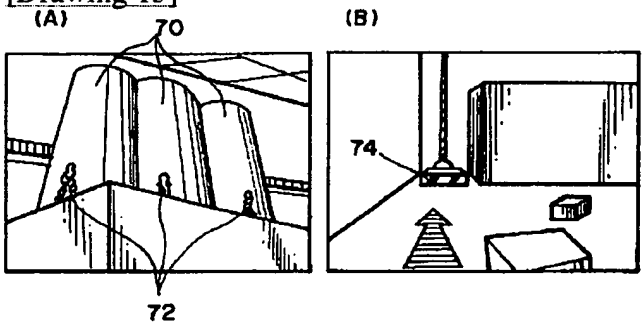


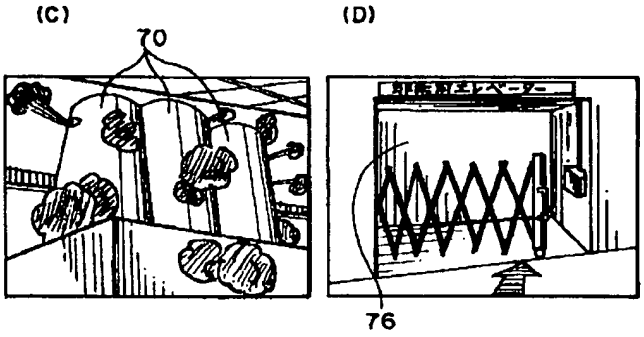
[Drawing 10]



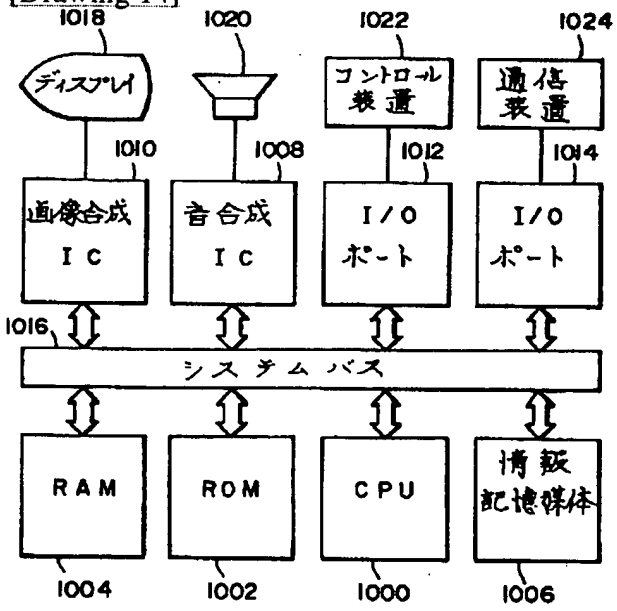


[Drawing 13]

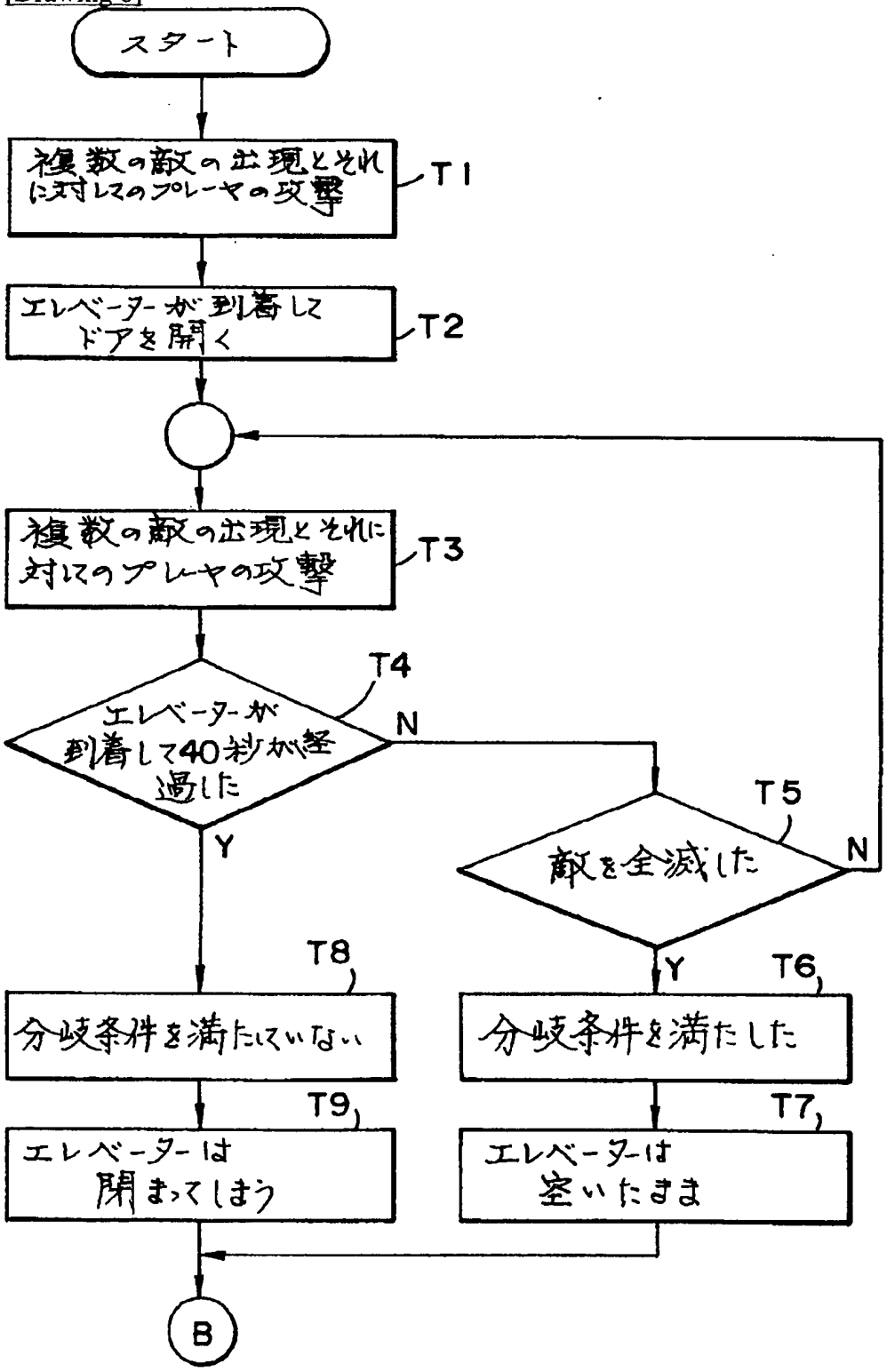




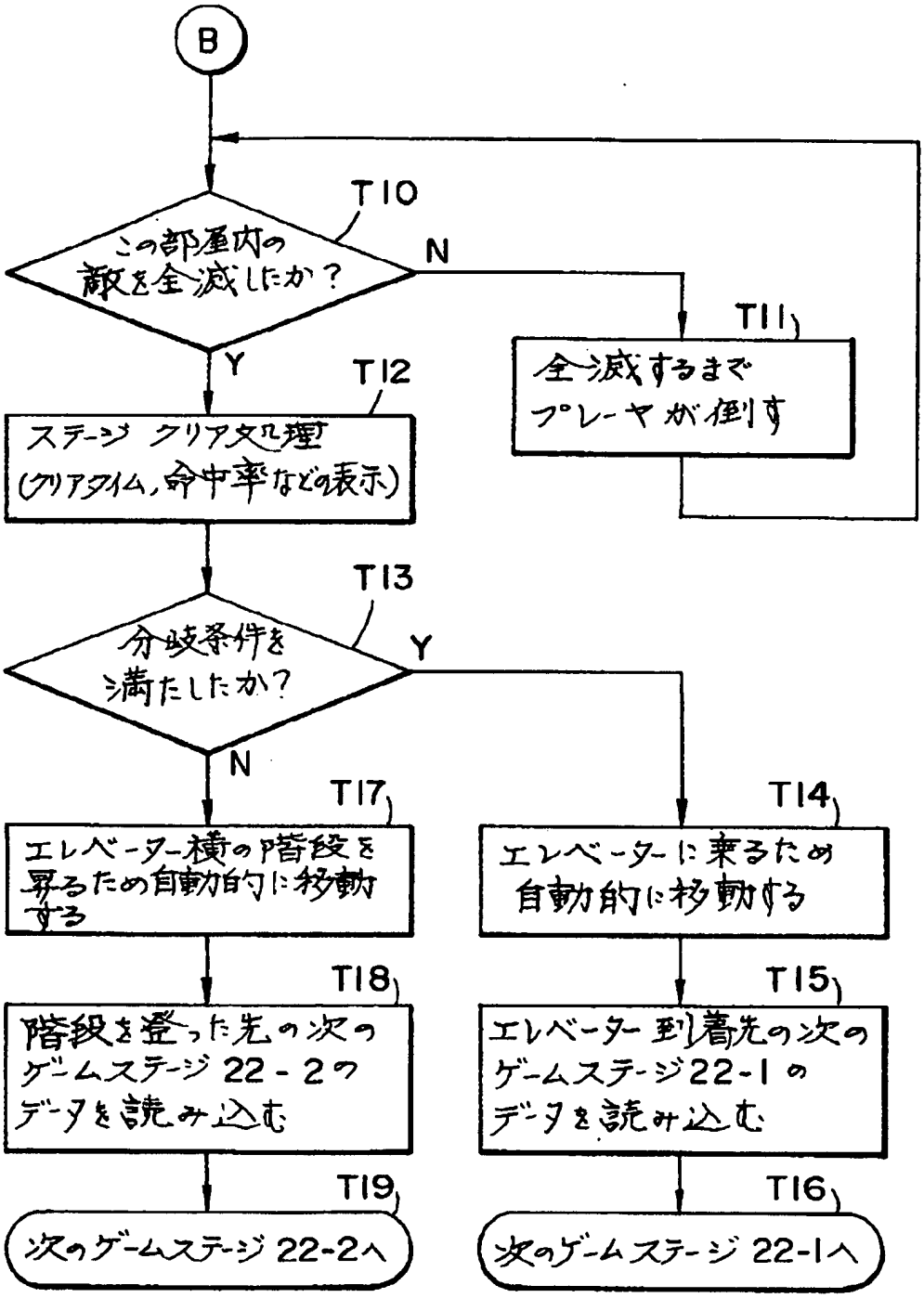
[Drawing 14]



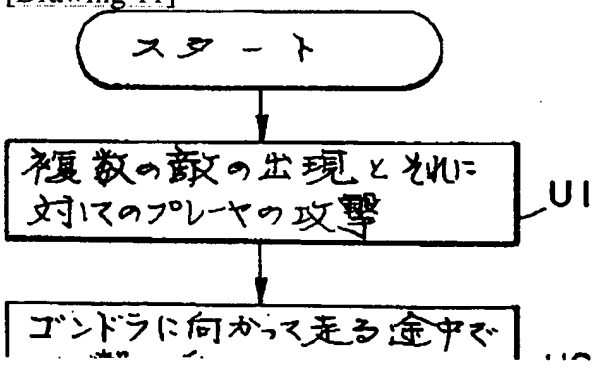
[Drawing 8]

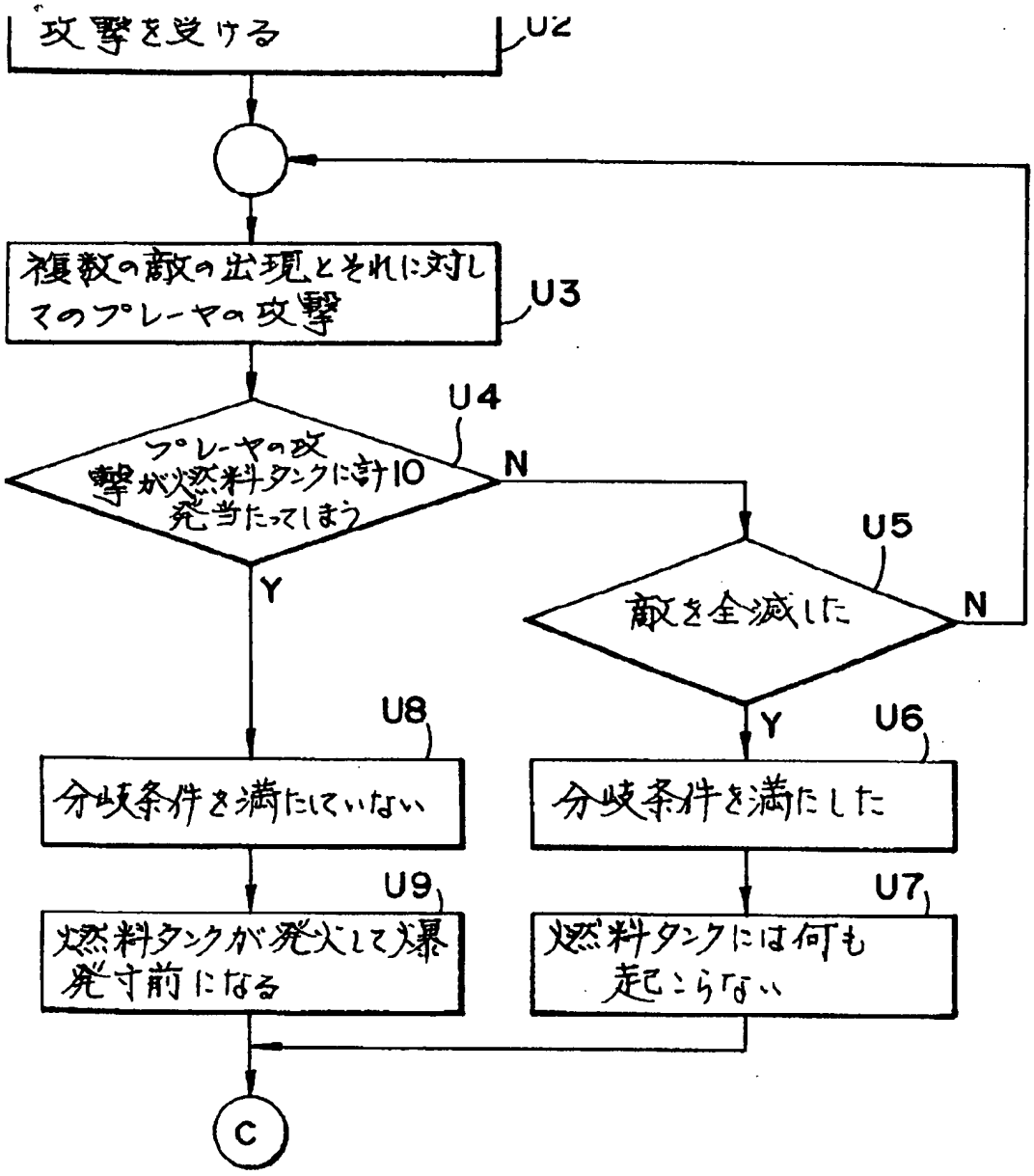


[Drawing 9]

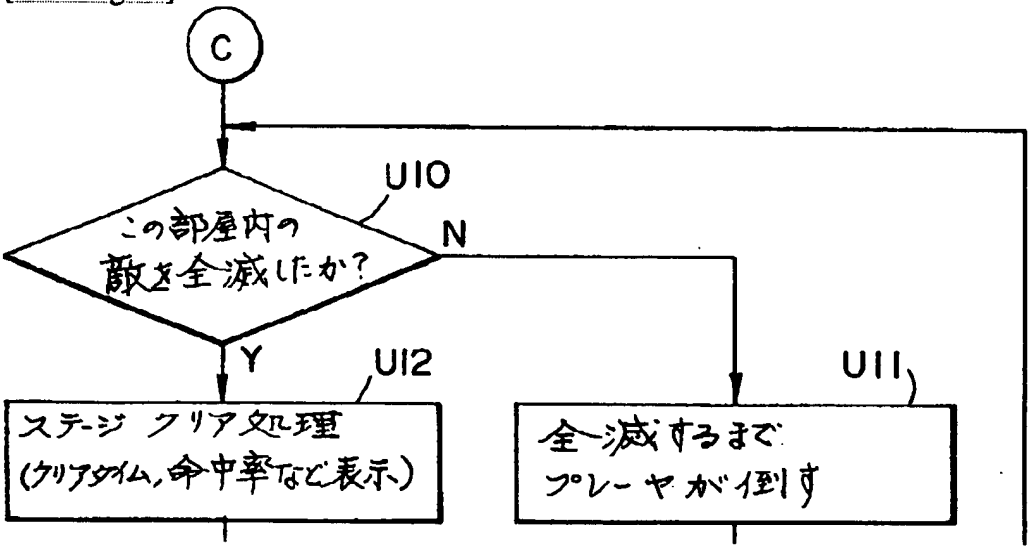

B
T10
この部屋内の敵を全滅したか？
N
Y
T11
全滅するまでプレーヤが倒す
T12
ステージ クリア処理 (クリアタイム、命中率などの表示)
T13
分岐条件を満たしたか？
Y
N
T17
エレベーター横の階段を昇るため自動的に移動する
T14
エレベーターに乗るため自動的に移動する
T18
階段を登った先の次のゲームステージ22-2のデータを読み込む
T15
エレベーター到着先の次のゲームステージ22-1のデータを読み込む
T19
次のゲームステージ22-2へ
T16
次のゲームステージ22-1へ

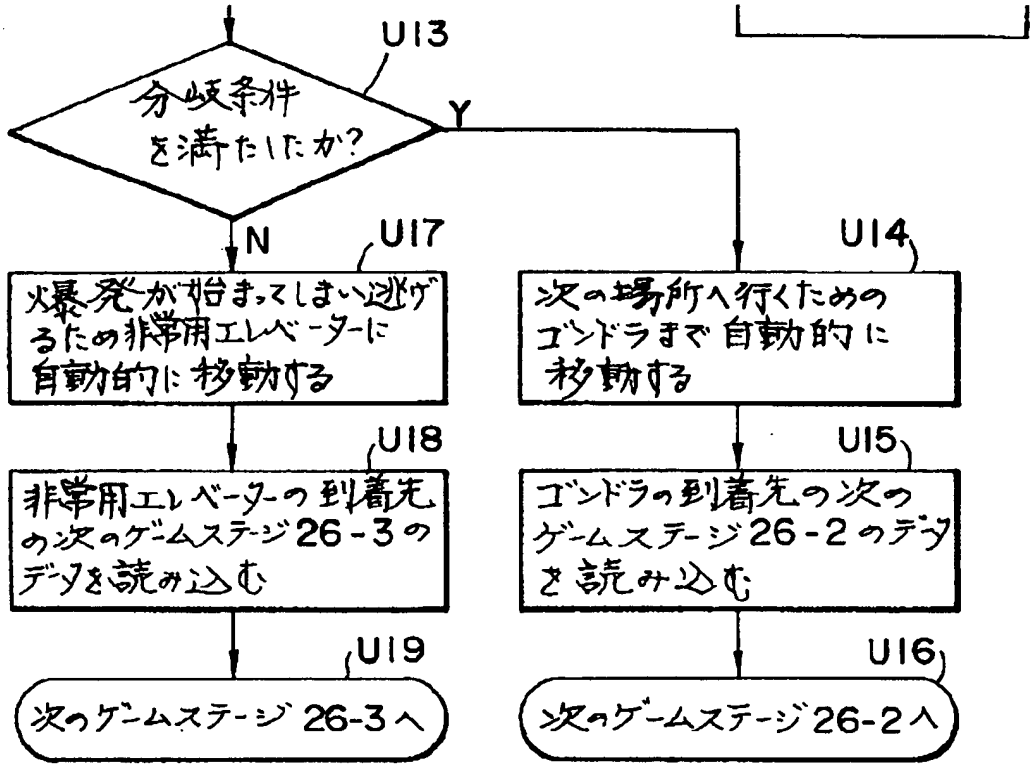
[Drawing 11]


スタート
複数の敵の出現とそれに対してのプレーヤの攻撃
U1
ゴンドラに向かって走る途中で

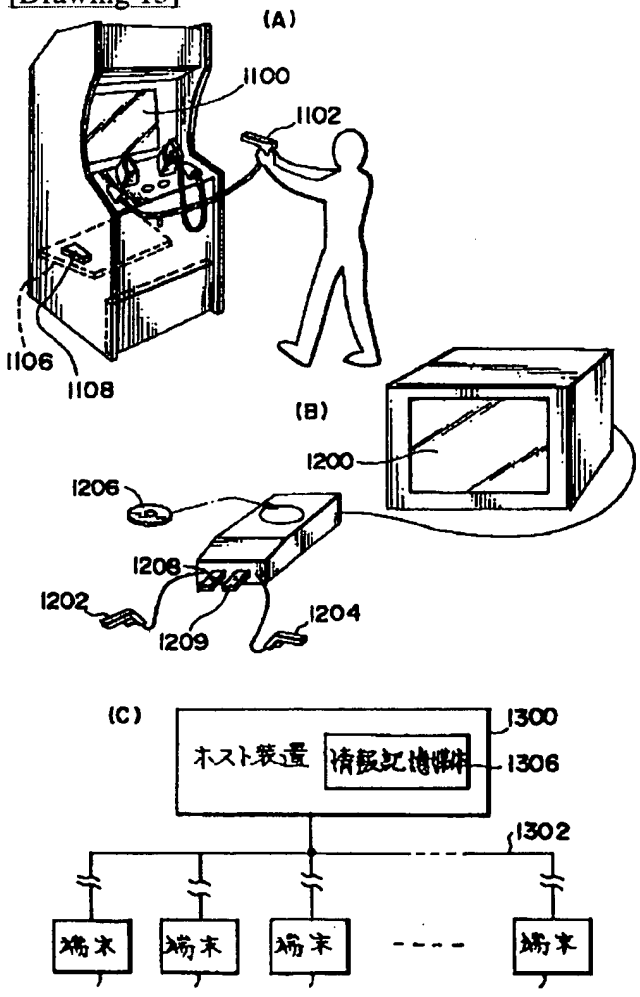

攻撃を受ける
U2
複数の敵の出現とそれに対してのプレーヤの攻撃
U3
U4
プレーヤの攻撃が燃料タンクに命中当たってしまう
N
Y
U5
敵を全滅した
N
Y
U8
分岐条件を満たしていない
U6
分岐条件を満たした
U9
燃料タンクが発火して爆発寸前になる
U7
燃料タンクには何も起こらない
C

[Drawing 12]


C
U10
この部屋内の敵を全滅したか?
N
Y
U12
ステージ クリア処理
(クリアタイム,命中率など表示)
U11
全滅するまでプレーヤが倒す

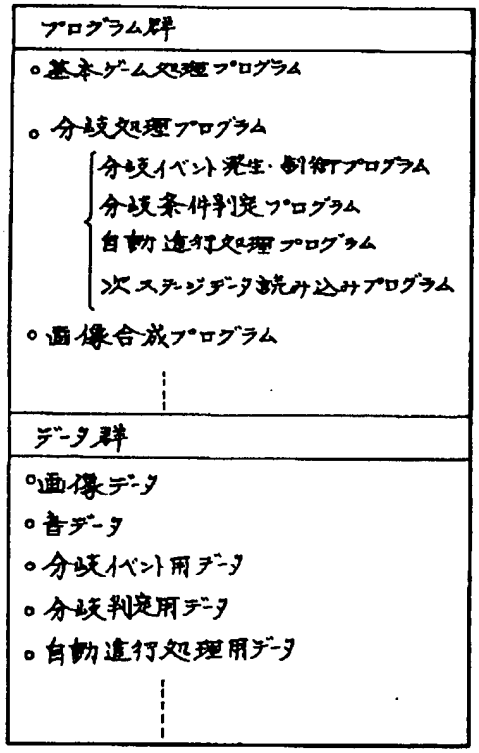

U13
分岐条件を満たしたか?
Y
N
U17
爆発が始まってしまい逃げるため非常用エレベーターに自動的に移動する
U14
次の場所へ行くためのゴンドラまで自動的に移動する
U18
非常用エレベーターの到着先の次のゲームステージ26-3のデータを読み込む
U15
ゴンドラの到着先の次のゲームステージ26-2のデータを読み込む
U19
次のゲームステージ26-3へ
U16
次のゲームステージ26-2へ

[Drawing 15]


(A)
1100
1102
1106
1108
(B)
1200
1206
1208
1202
1209
1204
(C)
ホスト装置
情報記憶媒体
1300
1306
1302
端末
端末
端末
端末

1304-1 1304-2 1304-3 1304-n

[Drawing 16]
情報記憶媒体



[Translation done.]

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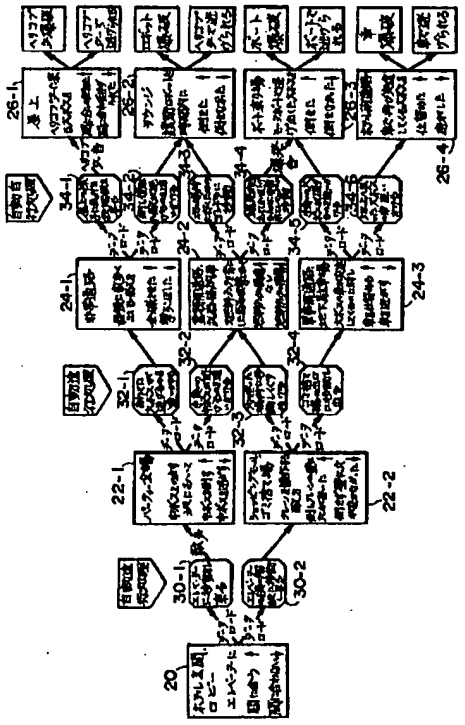
(54)【発明の名称】　ゲーム装置及び情報記憶媒体

(57)【要約】

【課題】　ゲーム展開に多様性を持たせプレーヤの継続したゲームプレイを促すことができるゲーム装置及び情報記憶媒体を提供すること。

【解決手段】　階層構造を持つゲームステージの中の例えばゲームステージ２２-2から子ノードに相当するゲームステージ２４-2、２４-3のいずれに分岐するかを、所与の分岐条件に基づいて判断する。ゲームステージ２２-2からゲームステージ２４-2、２４-3に分岐する際に、ゲームを自動進行させる自動進行処理３２-3、３２-4を行うと共にその処理の内容を互いに異ならせる。自動進行処理では視点、ゲームキャラクタを分岐先のゲームステージに関連する場所である穴や出口に自動的に移動させ、分岐先のゲームステージの情報をプレーヤに知らせる。分岐イベント発生から所与の時間内に分岐条件を満たしたか否かに基づいて又は分岐イベントでの標的の命中状況等に基づいて分岐するゲームステージを決定する。



【特許請求の範囲】

【請求項１】　ゲーム画像を合成し出力するゲーム装置であって、

階層構造を有する複数のゲームステージの中の１のゲームステージから、前記１のゲームステージを親ノードとした場合の子ノードに相当する他のゲームステージのいずれに分岐するかを、所与の分岐条件に基づいて判断する手段と、

前記１のゲームステージから前記他のゲームステージに分岐する際に、プレーヤの操作に依存せずにゲームを自動進行させる処理を行うと共に、前記処理の内容を、分岐先の前記他のゲームステージ毎に異ならせる自動進行処理手段と、

前記ゲームステージの画像を含むゲーム画像を合成する手段とを含むことを特徴とするゲーム装置。

【請求項２】　請求項１において、

前記自動進行処理手段が、

前記１のゲームステージ内の所与の場所であって分岐先の前記他のゲームステージに関連する場所に、プレーヤの視点及びプレーヤが操作するゲームキャラクタの少なくとも一方を自動的に移動させる処理を行うことを特徴とするゲーム装置。

【請求項３】　請求項１又は２において、

前記自動進行処理手段が、

ゲームの自動進行処理の際に、分岐先の前記他のゲームステージに関する情報をプレーヤに対して知らせる処理を行うことを特徴とするゲーム装置。

【請求項４】　ゲーム画像を合成し出力するゲーム装置であって、

階層構造を有する複数のゲームステージの中の１のゲームステージから、前記１のゲームステージを親ノードとした場合の子ノードに相当する他のゲームステージのいずれに分岐するかを、分岐イベントでの所与の時間内に所与の分岐条件を満たしたか否かに基づいて判断する手段と、

前記ゲームステージの画像を含むゲーム画像を合成する手段とを含むことを特徴とするゲーム装置。

【請求項５】　ゲーム画像を合成し出力するゲーム装置であって、

階層構造を有する複数のゲームステージの中の１のゲームステージから、前記１のゲームステージを親ノードとした場合の子ノードに相当する他のゲームステージのいずれに分岐するかを、分岐イベントでの標的の命中状況によって決まる分岐条件を満たしたか否かに基づいて判断する手段と、

前記ゲームステージの画像を含むゲーム画像を合成する手段とを含むことを特徴とするゲーム装置。

【請求項６】　請求項４又は５において、

前記１のゲームステージ内の所与の場所であって分岐先の前記他のゲームステージに関連する場所を、前記分岐イベントにおいてプレーヤに表示することを特徴とするゲーム装置。

【請求項７】　請求項４乃至６のいずれかにおいて、

前記１のゲームステージから前記他のゲームステージに分岐する際に、プレーヤの操作に依存せずにゲームを自動進行させる処理を行うと共に、前記処理の内容を、分岐先の前記他のゲームステージ毎に異ならせる自動進行処理手段を含むことを特徴とするゲーム装置。

【請求項８】　請求項１乃至７のいずれかにおいて、

前記階層構造を、１の子ノードに対して複数の親ノードの存在が可能な網構造としたことを特徴とするゲーム装置。

【請求項９】　ゲーム画像を合成し出力するための情報記憶媒体であって、

階層構造を有する複数のゲームステージの中の１のゲームステージから、前記１のゲームステージを親ノードとした場合の子ノードに相当する他のゲームステージのいずれに分岐するかを、所与の分岐条件に基づいて判断する処理を行うための情報と、

前記１のゲームステージから前記他のゲームステージに分岐する際に、プレーヤの操作に依存せずにゲームを自動進行させる処理を行うと共に、前記処理の内容を、分岐先の前記他のゲームステージ毎に異ならせる処理を行うための情報と、

前記ゲームステージの画像を含むゲーム画像を合成する処理を行うための情報とを含むことを特徴とする情報記憶媒体。

【請求項１０】　ゲーム画像を合成し出力するための情報記憶媒体であって、

階層構造を有する複数のゲームステージの中の１のゲームステージから、前記１のゲームステージを親ノードとした場合の子ノードに相当する他のゲームステージのいずれに分岐するかを、分岐イベントでの所与の時間内に所与の分岐条件を満たしたか否かに基づいて判断する処理を行うための情報と、

前記ゲームステージの画像を含むゲーム画像を合成する処理を行うための情報とを含むことを特徴とする情報記憶媒体。

【請求項１１】　ゲーム画像を合成し出力するための情報記憶媒体であって、

階層構造を有する複数のゲームステージの中の１のゲームステージから、前記１のゲームステージを親ノードとした場合の子ノードに相当する他のゲームステージのいずれに分岐するかを、分岐イベントでの標的の命中状況によって決まる分岐条件を満たしたか否かに基づいて判断する処理を行うための情報と、

前記ゲームステージの画像を含むゲーム画像を合成する処理を行うための情報とを含むことを特徴とする情報記憶媒体。

【発明の詳細な説明】

【０００１】
【発明の属する技術分野】本発明はゲーム装置及び情報記憶媒体に関する。
【０００２】
【背景技術及び発明が解決しようとする課題】従来より一連のゲームステージを順次クリアしてゆくことでプレーヤがゲームを楽しむことができるゲーム装置が知られている。即ちこのゲーム装置では、１のゲームステージにおいて所与のステージクリア条件を満たせば、そのゲームステージはクリアとなり、次のゲームステージに進む。そして次のゲームステージおいて、また所与のステージクリア条件を満たせば更に次のゲームステージに進む。このようにして順次ゲームステージをクリアし、全てのゲームステージをクリアすると、エンディング表示等が行われゲームが終了する。このように一連のゲームステージをプレーヤに順次クリアさせると共に、この一連のゲームステージにより創出されるゲーム展開、ストーリーをプレーヤに堪能させることで、プレーヤのゲームへの感情移入度、熱中度を格段に高めることができる。
【０００３】しかしながら従来のゲーム装置では、プレーヤがプレイする一連のゲームステージの内容は常に一意的に決まったものとなっていた。このためプレーヤは、一連のゲームステージを一度クリアしてしまうと、その一連のゲームステージを再度プレイしようという興味、動機づけを失ってしまう。従って、プレーヤの継続したゲームプレイを促すことができないという問題があった。
【０００４】本発明は、以上のような技術的課題を解決するためになされたものであり、その目的とするところは、ゲーム展開に多様性を持たせプレーヤの継続したゲームプレイを促すことができるゲーム装置及び情報記憶媒体を提供することにある。
【０００５】
【課題を解決するための手段】上述した課題を解決するために、本発明は、ゲーム画像を合成し出力するゲーム装置であって、階層構造を有する複数のゲームステージの中の１のゲームステージから、前記１のゲームステージを親ノードとした場合の子ノードに相当する他のゲームステージのいずれに分岐するかを、所与の分岐条件に基づいて判断する手段と、前記１のゲームステージから前記他のゲームステージに分岐する際に、プレーヤの操作に依存せずにゲームを自動進行させる処理を行うと共に、前記処理の内容を、分岐先の前記他のゲームステージ毎に異ならせる自動進行処理手段と、前記ゲームステージの画像を含むゲーム画像を合成する手段とを含むことを特徴とする。
【０００６】本発明によれば、親ノードのゲームステージから、子ノードのいずれのゲームステージに分岐するかが、所与の分岐条件に基づいて判断される。そして、この分岐の際に、ゲームを自動進行させる処理が行われ、例えば第１のゲームステージに分岐した場合と、第２のゲームステージに分岐した場合とで、自動進行処理の内容が異なったものとなる。このように本発明によれば、分岐条件に基づいてゲームステージを分岐させているためゲーム展開のバラエティを増すことができる。またゲームステージの分岐の際にゲームを自動進行させているため、ゲームステージのスムーズな分岐が可能となる。また自動進行処理の内容を分岐先のゲームステージ毎に異ならせているため、一連のゲームステージにより創出されるゲーム展開、ストーリーの流れを自然なものにできると共にプレーヤに与える演出効果を格段に高めることができる。
【０００７】また本発明は、前記自動進行処理手段が、前記１のゲームステージ内の所与の場所であって分岐先の前記他のゲームステージに関連する場所に、プレーヤの視点及びプレーヤが操作するゲームキャラクタの少なくとも一方を自動的に移動させる処理を行うことを特徴とする。
【０００８】このようにすれば、分岐先のゲームステージに関連する場所に視点又はゲームキャラクタが自動的に移動した後に、そのゲームステージへの分岐が行われることになるため、ゲームステージの分岐をスムーズ且つスピード感溢れるものとすることができる。
【０００９】また本発明は、前記自動進行処理手段が、ゲームの自動進行処理の際に、分岐先の前記他のゲームステージに関する情報をプレーヤに対して知らせる処理を行うことを特徴とする。
【００１０】このようにすれば、ゲームステージの分岐前に、分岐先のゲームステージに関する情報を、画像や音を使ってプレーヤに知らせることができる。これにより次のゲームステージに進むプレーヤに心の準備をさせたり、期待感を抱かせることが可能となり、ゲームの面白味を倍増できる。
【００１１】また本発明は、ゲーム画像を合成し出力するゲーム装置であって、階層構造を有する複数のゲームステージの中の１のゲームステージから、前記１のゲームステージを親ノードとした場合の子ノードに相当する他のゲームステージのいずれに分岐するかを、分岐イベントでの所与の時間内に所与の分岐条件を満たしたか否かに基づいて判断する手段と、前記ゲームステージの画像を含むゲーム画像を合成する手段とを含むことを特徴とする。
【００１２】本発明によれば、ゲームステージが分岐すると共に、いずれの分岐ステージに分岐するかが、所与の時間内に所与の分岐条件を満たしたか否かに基づいて判断されることになる。このようにすることで、どのゲームステージに分岐するかを、プレーヤの熟練度等に応じて異ならせることが可能となり、プレーヤが楽しむことができるゲーム展開、ストーリーのバラエティを格段

に増すことが可能となる。またプレーヤに制限時間を課すことで、プレーヤのゲームへの集中度、熱中度を高めることができる。

【００１３】また本発明は、ゲーム画像を合成し出力するゲーム装置であって、階層構造を有する複数のゲームステージの中の１のゲームステージから、前記１のゲームステージを親ノードとした場合の子ノードに相当する他のゲームステージのいずれに分岐するかを、分岐イベントでの標的の命中状況によって決まる分岐条件をたしたか否かに基づいて判断する手段と、前記ゲームステージの画像を含むゲーム画像を合成する手段とを含むことを特徴とする。

【００１４】本発明によれば、ゲームステージが分岐すると共に、いずれの分岐ステージに分岐するかが、標的の命中状況によって決まる分岐条件を満たしたか否かに基づいて判断されることになる。このようにすればプレーヤが楽しむことができるゲーム展開、ストーリーのバラエティを増すことができると共に、プレーヤのミスの少なさ、標的に対する射撃の正確性等を判断材料として、ゲームステージの分岐先を決定することが可能となる。

【００１５】また本発明は、前記１のゲームステージ内の所与の場所であって分岐先の前記他のゲームステージに関連する場所を、前記分岐イベントにおいてプレーヤに表示することを特徴とする。

【００１６】このようにすれば、プレーヤが進むゲームステージと異なるゲームステージが存在することをプレーヤに示唆することが可能となり、プレーヤの再度のゲームプレイを促すことが可能となる。

【００１７】また本発明は、前記階層構造を、１の子ノードに対して複数の親ノードの存在が可能な網構造としたことを特徴とする。

【００１８】このようにすることで、ゲームステージの表現のために必要な画像データ、音データの節約を図りながらも、ゲーム展開のバラエティを増すことが可能となる。

【００１９】

【発明の実施の形態】以下、本発明の実施例について図面を用いて説明する。

【００２０】図１に本実施例の機能ブロック図の一例を示す。ここで操作部１２は、プレーヤがレバー、ボタン等を操作して操作情報を入力するためのものであり、操作部１２にて得られた操作情報は処理部１００に出力される。処理部１００は、この操作情報と、所与のプログラム等に基づいて、プログラムの実行、各種モードの設定、表示物の配置等の種々の処理を行うものであり、その機能は、ＣＰＵ及びメモリなどのハードウェアにより実現される。画像合成部２００は、処理部１００での処理結果に基づいて、ゲーム画像の合成処理を行うものであり、その機能は、画像合成専用のＩＣ及びメモリ或いはＣＰＵ及びメモリなどのハードウェアにより実現される。画像合成部２００で生成された画像は表示部１０に出力され、表示部１０において表示される。

【００２１】処理部１００は、基本ゲーム処理部１１０、分岐処理部１２０を含む。

【００２２】ここで基本ゲーム処理部１１０は、基本的なゲーム演算処理を行うものであり、例えば画面上に背景や敵を発生させたり、発生した敵を動かしたり、敵に対するプレーヤの攻撃の当たり判定をしたりする等の処理を行う。一方、分岐処理部１２０は、ゲームステージの分岐に関する種々の処理を行うものであり、分岐条件判定部１２２、自動進行処理部１２４を含む。

【００２３】さて本実施例では、図２に示すように、ゲームステージに階層構造を持たせている。例えばゲームステージ２０を親ノードとした場合に、子ノードの位置にはゲームステージ２２-1、２２-2が配置される。同様にゲームステージ２２-1の子ノードにはゲームステージ２４-1、２４-2が配置され、ゲームステージ２２-2の子ノードにはゲームステージ２４-2、２４-3が配置される。またゲームステージ２４-1の子ノードにはゲームステージ２６-1、２６-2が、ゲームステージ２４-2の子ノードにはゲームステージ２６-2、２６-3が、ゲームステージ２４-3の子ノードにはゲームステージ２６-3、２６-4が配置される。

【００２４】そして本実施例では、親ノードのゲームステージから子ノードのゲームステージのいずれに分岐するかを所与の分岐条件に基づいて判断している。この判断は、図１の分岐条件判定部１２２が行う。例えば図２に示すように、ゲームステージ２０において、エレベータに間に合うという分岐条件を満たせば、ゲームステージ２２-1に分岐し、満たさなければゲームステージ２２-2に分岐する。同様にゲームステージ２２-1において、中ボスを倒せばゲームステージ２４-1に分岐し、逃せばゲームステージ２４-2に分岐する。またゲームステージ２２-2において、クレーンを操縦する敵を倒しクレーンの誤動作により壁に穴が空けばゲームステージ２４-2に分岐し、敵を倒せず壁に穴が空かなければゲームステージ２４-3に分岐する。他のゲームステージも同様である。

【００２５】そして本実施例の第１の特徴は、親ノードのゲームステージから子ノードのゲームステージに分岐する際に、プレーヤの操作に依存せずにゲームを自動進行させる処理を行うと共に、その処理の内容を、分岐先の子ノードのゲームステージ毎に異ならせている点にある。この処理は図１の自動進行処理部１２４が行う。例えば図２に示すように、ゲームステージ２０からゲームステージ２２-1に分岐する際には、プレーヤの視点又はプレーヤの操作するゲームキャラクタがエレベータの方に自動的に移動する等の自動進行処理３０-1が行われ、ゲームステージ２０からゲームステージ２２-2に分岐す

る際には、エレベータの横の階段の方に自動的に移動する等の自動進行処理３０-2が行われる。またゲームステージ２２-2からゲームステージ２４-2に分岐する際には、穴の空いた場所に自動的に移動する等の自動進行処理３２-3が行われ、ゲームステージ２２-2からゲームステージ２４-3に分岐する際には、ゴミ捨て場の出口に自動的に移動する等の自動進行処理３２-4が行われる。またゲームステージ２４-2からゲームステージ２６-2に分岐する際には、次の場所に行くためのゴンドラに自動的に移動する等の自動進行処理３４-3が行われ、ゲームステージ２４-2からゲームステージ２６-3に分岐する際には、燃料タンクの爆発から逃げるために非常用エレベータに自動的に移動する等の自動進行処理３４-4が行われる。

【００２６】このように本実施例によれば、ゲームステージを分岐させることでゲーム展開のバラエティを増すことができると共に、ゲームの自動進行処理を行うことでゲームステージの分岐をスムーズ且つ迅速に行うことができる。この結果、プレーヤの継続したプレイを促すことができると共に、スピーディーにゲームが進行するゲーム装置を提供することが可能となる。

【００２７】また本実施例の第２の特徴は、親ノードのゲームステージから子ノードのゲームステージのいずれに分岐させるかを、分岐イベントでの所与の時間内に所与の分岐条件を満たしたか否かに基づいて判断する点にある。例えばゲームステージ２０から、ゲームステージ２２-1、２２-2のどちらに分岐させるかは、エレベータの到着後、所与の時間内に分岐条件を満たしたか否かに基づいて判断され、満たした場合にはエレベータに乗ることに成功しゲームステージ２２-1に分岐し、満たさなかった場合にはエレベータに乗れずゲームステージ２２-2に分岐する。またゲームステージ２２-2から、ゲームステージ２４-2、２４-3のどちらに分岐させるかは、クレーンを操縦する敵を時間内に倒したか否かに基づいて判断され、倒した場合にはクレーンの誤動作により空いた穴を通りゲームステージ２４-2に分岐し、倒せなかった場合にはゴミ捨て場の出口を出てゲームステージ２４-3に分岐する。

【００２８】このように本実施例によれば、時間内に分岐条件を満たしたか否かに基づいて分岐先のゲームステージが決定されるため、例えばプレーヤの熟練度に応じてゲームステージを自動的に分岐させることが可能となる。これにより上級プレーヤは例えばゲームステージ２０、２２-1、２４-1、２６-1から成る一連のゲームステージをプレイでき、その一連のゲームステージにより創出されるゲーム展開、ストーリーを楽しむことができる。一方、初級プレーヤは例えばゲームステージ２０、２２-2、２４-3、２６-4から成る一連のゲームステージをプレイでき、上級プレーヤとは異なるゲーム展開、ストーリーを楽しむことが可能となる。更に初級のプレーヤであっても、熟練度が上がるにつれて、例えばゲームステージ２０、２２-2、２４-3、２６-3或いはゲームステージ２０、２２-2、２４-2、２６-3或いはゲームステージ２０、２２-2、２４-2、２６-2というように、異なる一連のゲームステージをプレイすることが可能となり、異なるゲーム展開、ストーリーを楽しむことが可能となる。これにより、ゲーム展開に多様性を持たせることができ、プレーヤの継続したゲームプレイを促すことが可能となる。

【００２９】更に本実施例によれば、プレーヤは、今までプレイしたことがないゲームステージをプレイしたいがために、時間内に分岐条件をクリアしようと必死にプレイすることになるため、プレーヤのゲームへの熱中度を格段に高めることができる。特に、ゲームステージのクリア条件とは別に分岐条件を設定することで、ゲームの面白味のバラエティを増すことができる。

【００３０】また本実施例の第３の特徴は、親ノードのゲームステージから子ノードのゲームステージのいずれに分岐させるかを、分岐イベントでの標的の命中状況によって決まる分岐条件を満たしたか否かに基づいて判断する点にある。例えばゲームステージ２４-2から、ゲームステージ２６-2、２６-3のどちらに分岐させるかは、燃料タンクを背にした敵に対する攻撃において、誤って燃料タンクに当たった弾の数が多いか少ないかに基づいて判断され、例えば燃料タンクの被弾数が所定数より少なければゲームステージ２６-2に分岐し、所定数以上であればゲームステージ２６-3に分岐する。

【００３１】このように実施例によれば、標的への命中状況に応じて分岐先のゲームステージが決定されるため、例えばプレーヤの熟練度に応じてゲームステージを自動的に分岐させることが可能となる。これによりゲーム展開の多様性を増すことができ、プレーヤの継続したゲームプレイを促すことが可能となる。また本実施例によれば、プレーヤのミスの少なさ、標的に対する射撃の正確性を判断材料として、ゲームステージの分岐先を決定することが可能となる。

【００３２】また本実施例の第４の特徴は、ゲームステージの階層構造を、１の子ノードに対して複数の親ノードの存在が可能な網構造とした点にある。例えば図２に示すように、ゲームステージ２４-2の親ノードに、２つのゲームステージ２２-1及び２２-2を設けている。同様にゲームステージ２６-2、２６-3の親ノードに、各々、ゲームステージ２４-1及び２４-2、ゲームステージ２４-2、２４-3を設けている。このようにゲームステージを網構造とすることで、必要となるゲームステージの数を節約しながら、ゲーム展開の多様性を増すことが可能となる。例えば図２において、ゲームステージ２２-1において中ボスを逃した場合の分岐先と、ゲームステージ２２-2において壁に穴が空いた場合の分岐先を、異なるゲームステージとする構成も考えられる。しかしながら、

このような構成とすると、ゲームステージの表現に必要な画像データ、音データ等が倍増してしまう。本実施例によれば、ゲームステージ２２-1の分岐先とゲームステージ２４-2の分岐先が同一のゲームステージ２４-2になるため、ゲームステージの表現に必要な画像データ、音データ等をほとんど増やすことなく、ゲーム展開の多様性を増すことが可能となる。

【００３３】次に本実施例の動作の詳細例について説明する。

【００３４】図３、図４に、ゲームステージ２２-2（図２参照）での分岐処理を説明するためのフローチャートを示す。まず画面上に複数の敵が出現し、プレーヤがそれに対して攻撃を加えると、その当たり判定が行われ、その判定結果に応じて画面上から敵を消したり、新たな敵を出現させたりする等の処理を行われる（ステップＳ１）。以上の処理は図１の基本ゲーム処理部１１０等が行う。

【００３５】次に分岐イベントが発生し、クレーンを操縦する敵が現れ、プレーヤに対して攻撃を仕掛けてくる（ステップＳ２、Ｓ３）。そしてクレーンを操縦する敵を所与の時間内、例えば３０秒以内に倒したか否かが判断され、倒した場合には分岐条件が満たされたとされ（ステップＳ４、Ｓ６）、倒さなかった場合には分岐条件が満たされなかったとされる（ステップＳ４、Ｓ５、Ｓ１０）。この判断は、図１の分岐条件判定部１２２が行う。分岐条件を満たした場合には、クレーンを操縦する敵は画面上から消えるが、クレーンは作動したままとなり暴走する（ステップＳ７、Ｓ８）。そしてクレーンが壁に激突し、図５（Ａ）に示すように、壁に穴４０が空く（ステップＳ９）。一方、分岐条件を満たさなかった場合には、クレーンを操縦する敵は逃げ画面上から消え（ステップＳ１１）、図６（Ａ）に示すように壁には穴は空かない。

【００３６】次に、この部屋内の敵を全滅させたか否かが判断され、全滅するまでプレーヤは敵に攻撃を加える（図４のステップＳ１２、Ｓ１３）。敵が全滅するとステージクリア処理が行われ、図５（Ｂ）、図６（Ｂ）に示すように、そのゲームステージのクリアタイム、命中率などが画面上に表示される（ステップＳ１４）。

【００３７】そして分岐条件が満たされていた場合には、図５（Ｃ）に示すように、プレーヤの視点又はプレーヤが操作するゲームキャラクタを穴４０の場所に自動的に移動させる処理を行う（ステップＳ１５、Ｓ１６）。この処理は、図１の自動進行処理部１２４が行う。そして図５（Ｄ）に示すように、穴４０を通して見えるドア４４、通路４６を表示したところで画面を暗くし、図５（Ｅ）に示すように、分岐先である次のゲームステージ２４-2を説明する表示を行う。そして次のゲームステージ２４-2のデータを読み込み、次のゲームステージ２４-2に分岐する（ステップＳ１７、Ｓ１８）。

【００３８】一方、分岐条件が満たされていなかった場合には、図６（Ｃ）に示すように、プレーヤの視点又はプレーヤが操作するゲームキャラクタを出口４２の方に自動的に移動させる処理を行う（ステップＳ１５、Ｓ１９）。この処理も自動進行処理部１２４が行う。そして図６（Ｄ）に示すように、出口４２から通路４８に入ったところで画面を暗くし、図６（Ｅ）に示すように、分岐先である次のゲームステージ２４-3を説明する表示を行う。そして次のゲームステージ２４-3のデータを読み込み、次のゲームステージ２４-3に分岐する（ステップＳ２０、Ｓ２１）。

【００３９】さて本実施例では、図７の矢印５０、５２に示すように、ゲームステージ２２-2内の所与の場所であって分岐先のゲームステージ２４-2、２４－3に関連する場所である穴４０、出口４２の場所に、視点又はゲームキャラクタを自動的に移動させている。このようにすればプレーヤが自ら操作することなく次のゲームステージに自動的に進むことが可能となる。これによりゲームステージの分岐をスムーズに行うことができ、スピード感溢れるゲーム展開を実現することが可能となる。

【００４０】また本実施例では、図５（Ｅ）、図６（Ｅ）に示すように、ゲームの自動進行処理の際に分岐先のゲームステージ２４-2、２４-3に関する情報をプレーヤに対して知らせる処理を行っている。これにより次のゲームステージに分岐する前に、プレーヤに心の準備をさせたり、プレーヤの期待感を高めることが可能となり、ゲーム分岐がプレーヤに与える演出効果を、より一層高めることが可能となる。

【００４１】なお本実施例では、分岐先のゲームステージに関する情報を、画像のみならず音によってもプレーヤに知らせている。例えば図２に示すように、ゲームステージ２０からゲームステージ２２-1への分岐の際には敵の音声を出力し、ゲームステージ２４-1からゲームステージ２６-1への分岐の際にはヘリコプターの音を出力している。

【００４２】また本実施例では、ゲームステージ２２-2内の所与の場所であって分岐先のゲームステージ２４-2、２４-3に関連する場所である穴４０、出口４２を、分岐イベントにおいてプレーヤに表示している。このようにすれば例えば図５（Ａ）に示すように、時間内にクレーンの敵を倒すことに成功しゲームステージ２４-2に進むプレーヤに対して、ゲームステージ２４-3に関連する場所である出口４２を表示することができ、このプレーヤに対して他のゲームステージがあることを示唆することが可能となる。そしてこの示唆は、このプレーヤが一連のゲームステージをクリアした後に再度ゲームプレイを試みることの動機づけとなり、この動機づけによりプレーヤの継続したゲームプレイを促すことが可能となる。

【００４３】図８、図９に、ゲームステージ２０（図２

参照）での分岐処理を説明するためのフローチャートを示す。まず他のエリアでの複数の敵の出現、それに対するブレーヤの攻撃等に関する処理を行った後に、分岐イベントが発生する（ステップＴ１、Ｔ２）。この分岐イベントでは、図１０（Ａ）に示すように、ブレーヤはエレベータ６０を使用してこの階に到着し、到着後にエレベータ６０のドアが開き、その後、障害物６２に隠れながら敵と対戦する（ステップＴ２、Ｔ３）。

【００４４】この時、エレベータ６０は、到着後、所与の時間内、例えば４０秒後にまた上の階に昇ってしまうという設定になっている。そして、この４０秒の間にブレーヤがそのエリアでの敵を全滅させると分岐条件は満たされたことになりエレベータ６０は開いたままとなる（ステップＴ４、Ｔ５、Ｔ６、Ｔ７）。一方、４０秒の間に敵を全滅しないと、分岐条件は満たされなかったことになり、図１０（Ｃ）に示すようにエレベータ６０は閉じてしまう（ステップＴ４、Ｔ８、Ｔ９）。

【００４５】次に、この部屋内の敵を全滅させたか否かが判断され、全滅するまでブレーヤは敵に攻撃を加え、敵が全滅するとステージクリア処理が行われる（図９のステップＴ１０、Ｔ１１、Ｔ１２）。

【００４６】そして分岐条件が満たされていた場合には、図１０（Ｂ）に示すように、視点又はゲームキャラクタをエレベータ６０の方に自動的に移動させる処理を行う（ステップＴ１３、Ｔ１４）。そして次のゲームステージ２２-1の説明表示等を行った後、次のゲームステージ２２-1のデータを読み込み、ゲームステージが分岐する（ステップＴ１５、Ｔ１６）。

【００４７】一方、分岐条件が満たされていなかった場合には、図１０（Ｄ）に示すように、視点又はゲームキャラクタをエレベータ６０の横の階段６４の方に自動的に移動させる処理を行う（ステップＴ１３、Ｔ１７）。そして次のゲームステージ２２-2の説明表示等を行った後、次のゲームステージ２２-2のデータを読み込み、ゲームステージが分岐する（ステップＴ１８、Ｔ１９）。

【００４８】図１１、図１２に、ゲームステージ２４-2（図２参照）での分岐処理を説明するためのフローチャートを示す。まず他のエリアでの複数の敵の出現、それに対するブレーヤの攻撃等に関する処理を行った後に、分岐イベントが発生する（ステップＵ１、Ｕ２）。この分岐イベントでは、ゴンドラに向かう途中で敵から攻撃を受ける。そして攻撃方向を見上げたブレーヤは、図１３（Ａ）に示すように、燃料タンク７０を背にして現れる敵７２を発見し、これらの敵との対戦を行う（ステップＵ３）。

【００４９】ここで敵７２を狙って外れた弾の燃料タンク７０への被弾数が、所与数、例えば１０発よりも小さい場合には、分岐条件は満たされたことになり燃料タンク７０には何も起こらない（ステップＵ４、Ｕ５、Ｕ６、Ｕ７）。一方、燃料タンク７０への被弾数が１０発以上の場合には、分岐条件は満たされなかったことになり、図１３（Ｃ）に示すように燃料タンク７０は爆発寸前になる（ステップＵ４、Ｕ８、Ｕ９）。

【００５０】次に、この部屋内の敵を全滅させたか否かが判断され、全滅するまでブレーヤは敵に攻撃を加え、敵が全滅するとステージクリア処理が行われる（図１２のステップＵ１０、Ｕ１１、Ｕ１２）。

【００５１】そして分岐条件が満たされていた場合には、図１３（Ｂ）に示すように、視点又はゲームキャラクタをゴンドラ７４の方に自動的に移動させる処理を行う（ステップＵ１３、Ｕ１４）。そして次のゲームステージ２６-2の説明表示等を行った後、次のゲームステージ２６-2のデータを読み込み、ゲームステージが分岐する（ステップＵ１５、Ｕ１６）。

【００５２】一方、分岐条件が満たされていなかった場合には、図１３（Ｄ）に示すように、視点又はゲームキャラクタを非常用エレベータ７６の方に自動的に移動させる処理を行う（ステップＵ１３、Ｕ１７）。そして次のゲームステージ２６-3の説明表示等を行った後、次のゲームステージ２６-3のデータを読み込み、ゲームステージが分岐する（ステップＵ１８、Ｕ１９）。

【００５３】次に、本実施例を実現できるハードウェアの構成の一例について図１４を用いて説明する。同図に示す装置では、ＣＰＵ１０００、ＲＯＭ１００２、ＲＡＭ１００４、情報記憶媒体１００６、音合成ＩＣ１００８、画像合成ＩＣ１０１０、Ｉ／Ｏポート１０１２、１０１４が、システムバス１０１６により相互にデータ送受信可能に接続されている。そして前記画像合成ＩＣ１０１０にはディスプレイ１０１８が接続され、音合成ＩＣ１００８にはスピーカ１０２０が接続され、Ｉ／Ｏポート１０１２にはコントロール装置１０２２が接続され、Ｉ／Ｏポート１０１４には通信装置１０２４が接続されている。

【００５４】情報記憶媒体１００６は、プログラム、表示物を表現するための画像情報等が主に格納されるものであり、ＣＤ－ＲＯＭ、ゲームカセット、ＩＣカード、ＤＶＤ、ＭＯ、ＦＤ、メモリ等が用いられる。例えば家庭用ゲーム装置ではゲームプログラム等を格納する情報記憶媒体としてＣＤ－ＲＯＭ、ゲームカセット、ＤＶＤが用いられる。また業務用ゲーム装置ではＲＯＭ等のメモリが用いられ、この場合には情報記憶媒体１００６はＲＯＭ１００２になる。

【００５５】コントロール装置１０２２はゲームコントローラ、操作パネル等に相当するものであり、ブレーヤがゲーム進行に応じて行う判断の結果を装置本体に入力するための装置である。

【００５６】情報記憶媒体１００６に格納されるプログラム、ＲＯＭ１００２に格納されるシステムプログラム（装置本体の初期化情報等）、コントロール装置１０２２によって入力される信号等に従って、ＣＰＵ１０００

は装置全体の制御や各種データ処理を行う。ＲＡＭ１００４はこのＣＰＵ１０００の作業領域等として用いられる記憶手段であり、情報記憶媒体１００６やＲＯＭ１００２の所与の内容、あるいはＣＰＵ１０００の演算結果等が格納される。また分岐処理を行うために必要なテーブルデータ等の論理的な構成を持つデータ構造は、このＲＡＭ又は情報記憶媒体上に構築されることになる。

【００５７】更に、この種の装置には音合成ＩＣ１００８と画像合成ＩＣ１０１０とが設けられていてゲーム音やゲーム画像の好適な出力が行えるようになっている。音合成ＩＣ１００８は情報記憶媒体１００６やＲＯＭ１００２に記憶される情報に基づいて効果音やバックグラウンド音楽等のゲーム音を合成する集積回路であり、合成されたゲーム音はスピーカ１０２０によって出力される。また、画像合成ＩＣ１０１０は、ＲＡＭ１００４、ＲＯＭ１００２、情報記憶媒体１００６等から送られる画像情報に基づいてディスプレイ１０１８に出力するための画素情報を合成する集積回路である。なおディスプレイ１０１８として、いわゆるヘッドマウントディスプレイ（ＨＭＤ）と呼ばれるものを使用することもできる。

【００５８】また、通信装置１０２４はゲーム装置内部で利用される各種の情報を外部とやりとりするものであり、他のゲーム装置と接続されてゲームプログラムに応じた所与の情報を送受したり、通信回線を介してゲームプログラム等の情報を送受することなどに利用される。

【００５９】そして図１、図２、図５（Ａ）～図７、図１０（Ａ）～（Ｄ）、図１３（Ａ）、～（Ｄ）で説明した種々の処理は、図３、図４、図８、図９、図１１、図１２のフローチャートに示した処理等を行うプログラムを格納した情報記憶媒体１００６と、該プログラムに従って動作するＣＰＵ１０００、画像合成ＩＣ１０１０等によって実現される。なお画像合成ＩＣ１０１０、音合成ＩＣ１００８等で行われる処理は、ＣＰＵ１０００あるいは汎用のＤＳＰ等によりソフトウェア的に行ってもよい。

【００６０】図１５（Ａ）に、本実施例を業務用ゲーム装置に適用した場合の例を示す。プレーヤは、ディスプレイ１１００上に映し出されたゲーム画像を見ながら、ガンコントローラ１１０２を用いて敵をシューティングしてゲームを楽しむ。装置に内蔵されるＩＣ基板１１０６には、ＣＰＵ、画像合成ＩＣ、音合成ＩＣ等が実装されている。そして階層構造を有する複数のゲームステージの中の１のゲームステージから、１のゲームステージを親ノードとした場合の子ノードに相当する他のゲームステージのいずれに分岐するかを、所与の分岐条件に基づいて判断するための情報、１のゲームステージから他のゲームステージに分岐する際に、プレーヤの操作に依存せずにゲームを自動進行させる処理を行うと共に、処理の内容を、分岐先の他のゲームステージ毎に異ならせるための情報、ゲームステージの画像を含むゲーム画像を合成するための情報、１のゲームステージ内の所与の場所であって分岐先の他のゲームステージに関連する場所に、プレーヤの視点及びプレーヤが操作するゲームキャラクタの少なくとも一方を自動的に移動させる処理を行うための情報、ゲームの自動進行処理の際に、分岐先の他のゲームステージに関する情報をプレーヤに対して知らせる処理を行うための情報、前記１のゲームステージから前記他のゲームステージのいずれに分岐するかを、分岐イベントでの所与の時間内に所与の分岐条件を満たしたか否か或いは分岐イベントでの標的の命中状況によって決まる分岐条件を満たしたか否かに基づいて判断するための情報、１のゲームステージ内の所与の場所であって分岐先の他のゲームステージに関連する場所を、分岐イベントにおいてプレーヤに表示するための情報、前記階層構造を、１の子ノードに対して複数の親ノードの存在が可能な網構造とするための情報等は、ＩＣ基板１１０６上の情報記憶媒体であるメモリ１１０８に格納される。以下、これらの情報を格納情報と呼ぶ。これらの格納情報は、上記の種々の処理を行うためのプログラムコード、画像情報、音情報、表示物の形状情報、テーブルデータ、リストデータ、プレーヤ情報等の少なくとも１つを含むものである。なお図１６には、情報記憶媒体への情報の格納形態の一例が示される。

【００６１】図１５（Ｂ）に、本実施例を家庭用のゲーム装置に適用した場合の例を示す。プレーヤはディスプレイ１２００に映し出されたゲーム画像を見ながら、ゲームコントローラ１２０２、１２０４を操作してゲームを楽しむ。この場合、上記格納情報は、本体装置に着脱自在な情報記憶媒体であるＣＤ－ＲＯＭ１２０６、ＩＣカード１２０８、１２０９等に格納されている。

【００６２】図１５（Ｃ）に、ホスト装置１３００と、このホスト装置１３００と通信回線１３０２を介して接続される端末１３０４-1～１３０４-nとを含むゲーム装置に本実施例を適用した場合の例を示す。この場合、上記格納情報は、例えばホスト装置１３００が制御可能な磁気ディスク装置、磁気テープ装置、メモリ等の情報記憶媒体１３０６に格納されている。端末１３０４-1～１３０４-nが、ＣＰＵ、画像合成ＩＣ、音合成ＩＣを有し、スタンドアロンでゲーム画像、ゲーム音を合成できるものである場合には、ホスト装置１３００からは、ゲーム画像、ゲーム音を合成するためのゲームプログラム等が端末１３０４-1～１３０４-nに配送される。一方、スタンドアロンで合成できない場合には、ホスト装置１３００がゲーム画像、ゲーム音を合成し、これを端末１３０４-1～１３０４-nに伝送し端末において出力することになる。

【００６３】なお本発明は、上記実施例で説明したものに限らず、種々の変形実施が可能である。

【００６４】例えば自動進行処理の内容としては、図７

で説明したように、分岐先の他のゲームステージに関連する場所に視点又はゲームキャラクタを移動させる処理等が特に有効であるが、これ以外の種々の変形実施が可能である。

【００６５】またゲームステージの階層構造は図２に示すような網構造であることが特に望ましいが、木構造等の他の構造とすることも可能である。

【００６６】また所与の時間内に所与の分岐条件を満たしたか否かでゲームステージを分岐させる場合、その分岐条件も、上記実施例で説明したようなものに限らず種々の変形実施が可能である。

【００６７】また標的の命中状況によって決まる分岐条件として、上記実施例では燃料タンクへの被弾数によって決まる分岐条件について説明したが、本発明はこれに限らず、例えば標的に対する命中率、はずし方の度合いによって決まる分岐条件等、種々の変形実施が可能である。

【００６８】また本発明は、一連のゲームステージを勝ち抜いてゆくゲームに適用した場合に特に効果を奏するが、シューティングゲーム、アクションゲーム、対戦ゲーム等、本発明の要旨の範囲内で種々のゲームに適用できる。

【００６９】また本発明は、家庭用、業務用のゲーム装置のみならず、シミュレータ、多数のプレーヤが参加する大型アトラクション装置、パーソナルコンピュータ、マルチメディア端末等の種々のゲーム装置に適用できる。

【００７０】

【図面の簡単な説明】

【図１】本実施例の機能ブロック図の一例である。

【図２】ゲームステージの階層構造について説明するための図である。

【図３】本実施例の動作の一例を説明するためのフローチャートである。

【図４】本実施例の動作の一例を説明するためのフローチャートである。

【図５】図５（Ａ）～（Ｅ）は、分岐条件を満たした場合に本実施例により合成されるゲーム画像の一例である。

【図６】図６（Ａ）～（Ｅ）は、分岐条件を満たさなかった場合に本実施例により合成されるゲーム画像の一例である。

【図７】ゲームステージでの視点、ゲームキャラクタの自動移動について説明するための図である。

【図８】本実施例の動作の一例を説明するためのフローチャートである。

【図９】本実施例の動作の一例を説明するためのフローチャートである。

【図１０】図１０（Ａ）～（Ｄ）は、本実施例により合成されるゲーム画像の一例である。

【図１１】本実施例の動作の一例を説明するためのフローチャートである。

【図１２】本実施例の動作の一例を説明するためのフローチャートである。

【図１３】図１３（Ａ）～（Ｄ）は、本実施例により合成されるゲーム画像の一例である。

【図１４】本実施例を実現するハードウェアの構成の一例を示す図である。

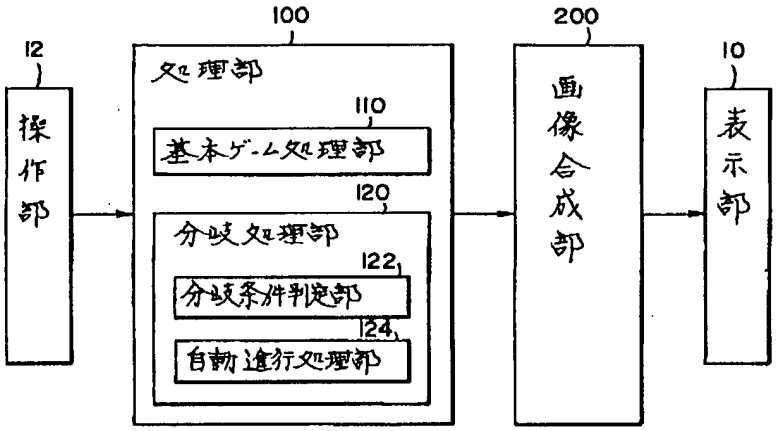
【図１５】図１５（Ａ）、（Ｂ）、（Ｃ）は、本実施例が適用される種々の形態の装置を示す図である。

【図１６】情報記憶媒体への情報の格納形態の例を示す図である。

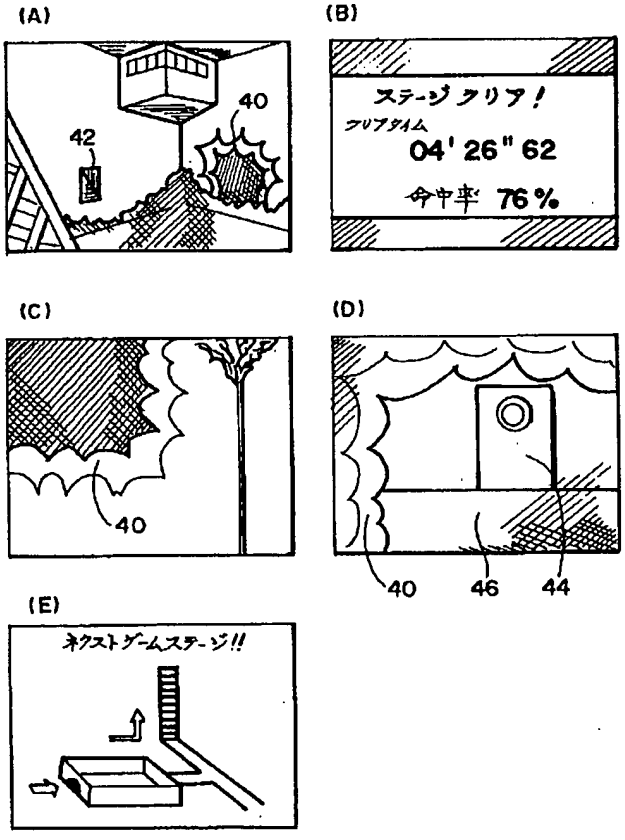
【符号の説明】

１０　表示部
１２　操作部
１００　処理部
１１０　基本ゲーム処理部
１２０　分岐処理部
１２２　分岐条件判定部
１２４　自動進行処理部
２００　画像合成部

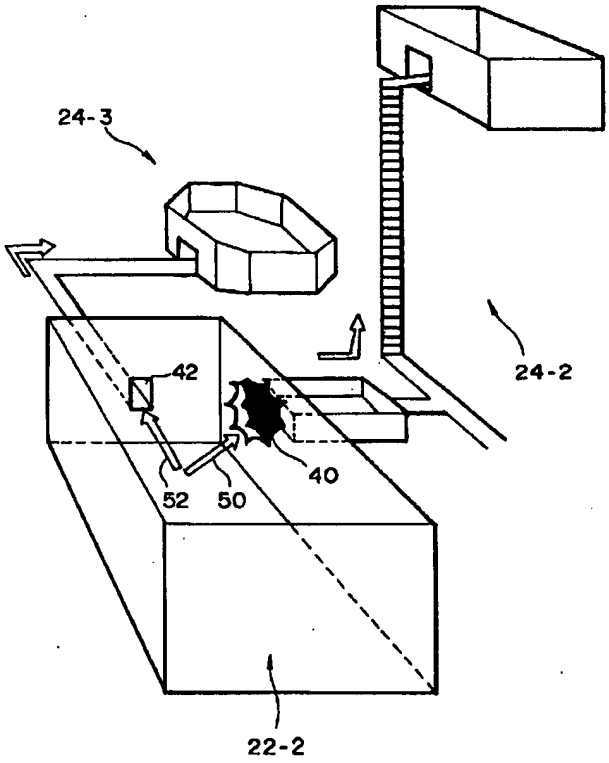
【図１】


100
200
12
処理部
10
操作部
110
基本ゲーム処理部
120
分岐処理部
画像合成部
表示部
122
分岐条件判定部
124
自動進行処理部

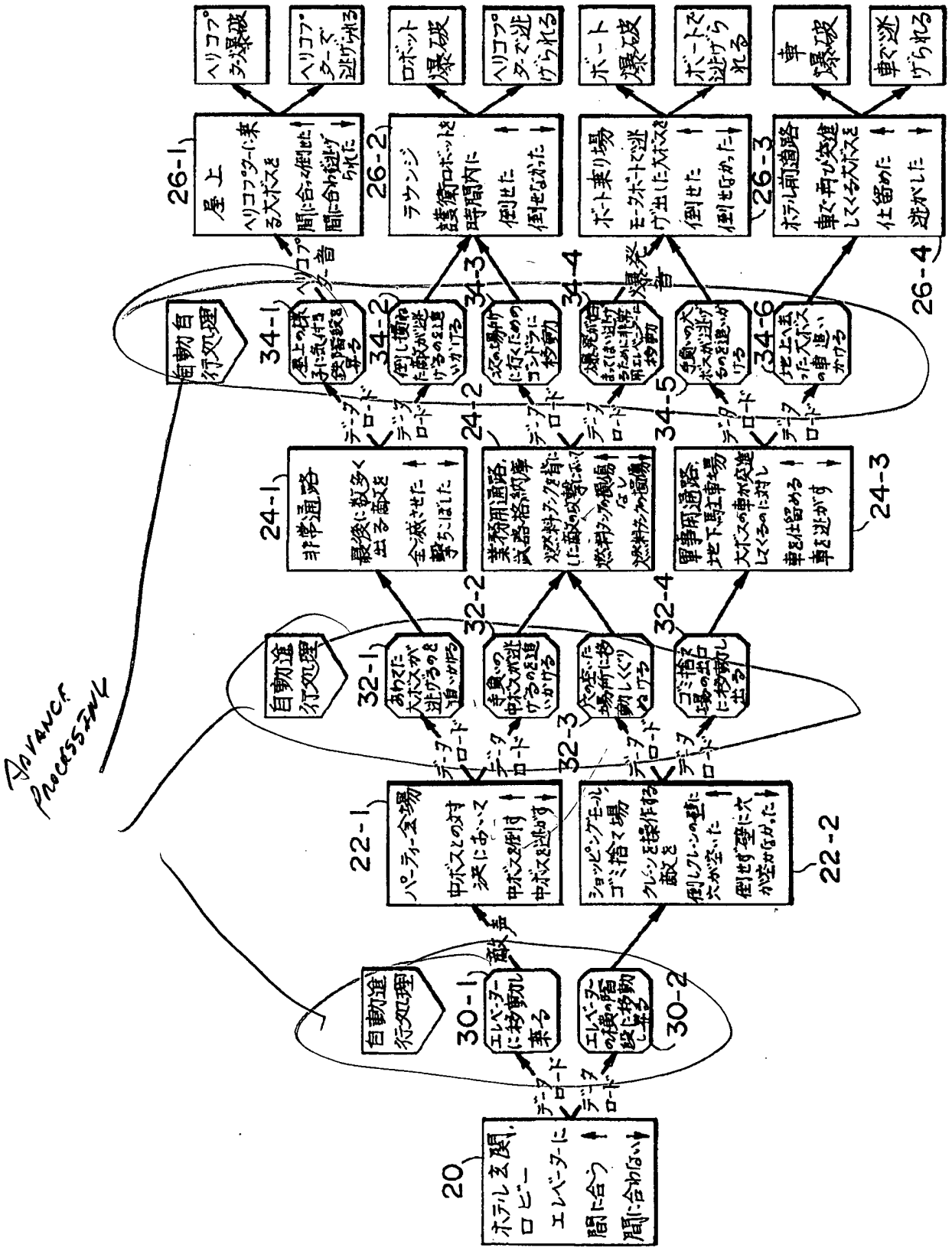
【図５】


(A)
40
42
(B)
ステージクリア！
クリアタイム
04' 26" 62
命中率 76%
(C)
40
(D)
40
46
44
(E)
ネクストゲームステージ!!

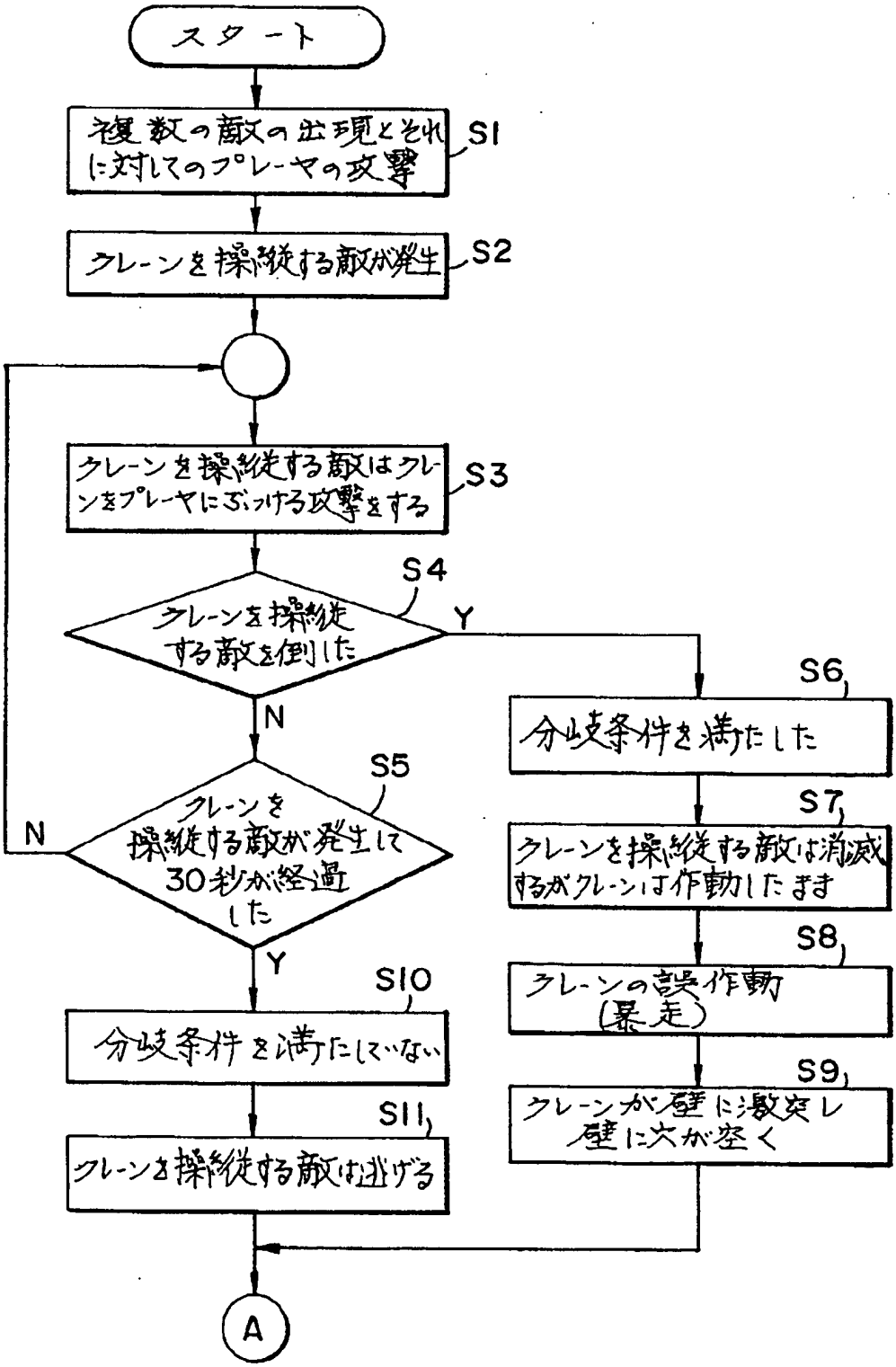
【図７】


24-3
24-2
42
40
52
50
22-2

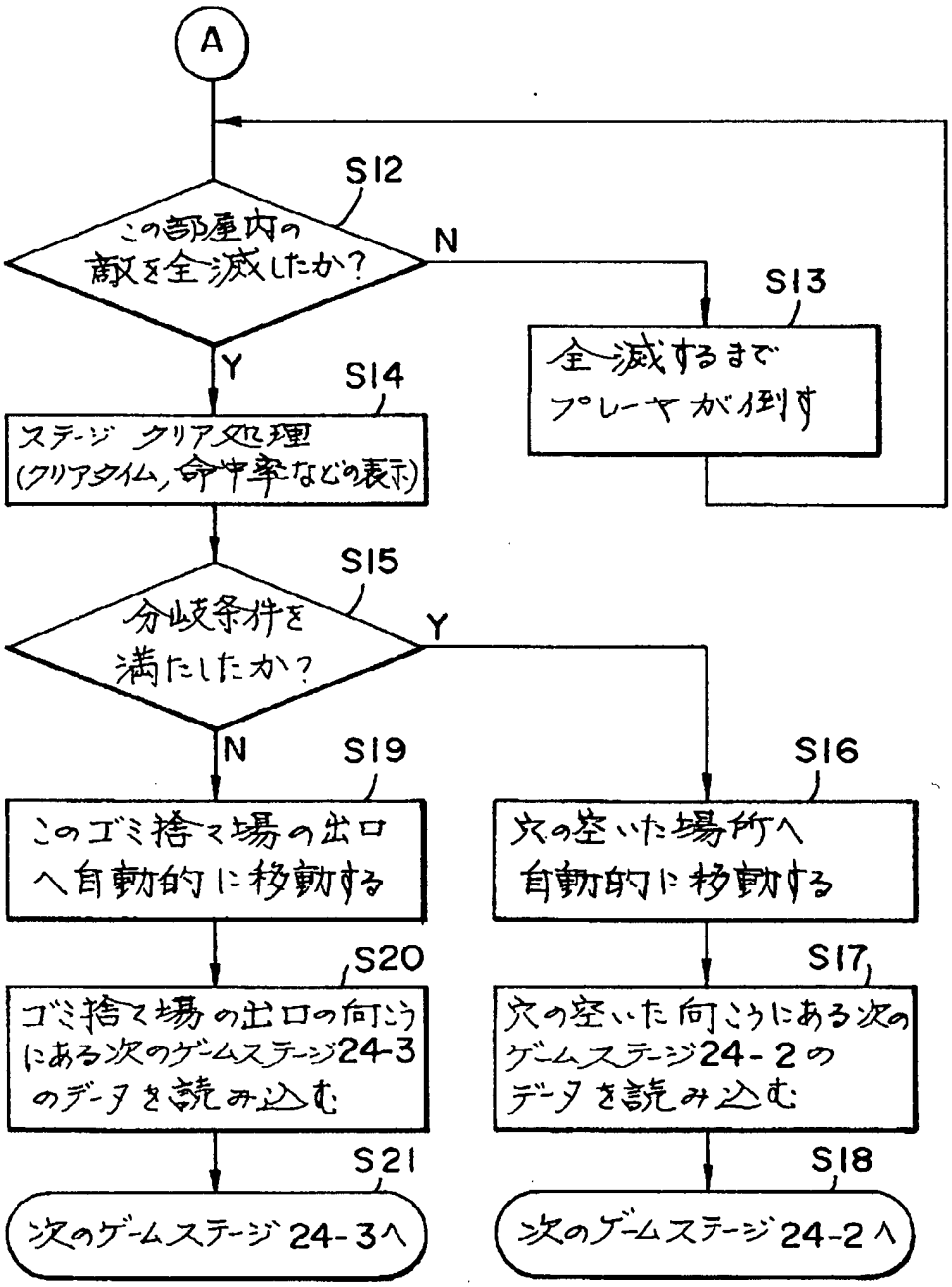
【図２】


ADVANCE PROCESSING
20
ホテル玄関、ロビー エレベーターに 間に合う 間に合わない
30-1
エレベーターに移動 乗る
30-2
エレベーターの扉の前に移動 乗る
自動進行処理
22-1
パーティー会場 中ボスとの対決 中ボスを倒す 中ボスを逃がす
22-2
ショッピングモール ゴミ捨て場 クレーンを操作する 敵を 倒しクレーンの上に移動 穴が空いた 倒せず空に穴が空かなかった
32-1
あわてた大ボスが逃げるのを追いかける
32-2
手負いの中ボスが逃げるのを追いかける
32-3
その広い場所に移動しくぐりぬける
32-4
ゴミ捨て場の出口に移動し出る
24-1
非常通路 最後に数多く出る敵を 全滅させた 撃ちぼした
24-2
業務用通路 武器格納庫 燃料タンクを背にした敵の攻撃にふんばる 燃料タンクの爆風 なし 燃料タンク爆発
24-3
軍事用通路 地下駐車場 大ボスの車が突進してくるのに対し 車を仕留める 車を逃がす
34-1
屋上の扉をふさげる鉄格子を壊す
34-2
割り箱に敵が逃げるのを追いかける
34-3
次の場所に行くためのゴンドラに移動
34-4
爆発が止まるまでは逃げ場もなく仕方なく爆発に耐える
34-5
手負いの大ボスが逃げるのを追いかける
34-6
地上に出た大ボスの車追いかける
26-1
屋上 ヘリコプターに乗る大ボスを 間に合った 間に合わなかった
26-2
ラウンジ 護衛ロボットを 時間内に 倒せた 倒せなかった
26-3
ホテル前通路 車で再び突進してくる大ボスを 仕留めた 逃がした
26-4
ヘリコプター爆破
ヘリコプターで逃げられる
ロボット爆破
ヘリコプターで逃げられる
ボート爆破
ボートで逃げられる
車爆破
車で逃げられる
データロード
敵声
ヘリコプター音
爆発音

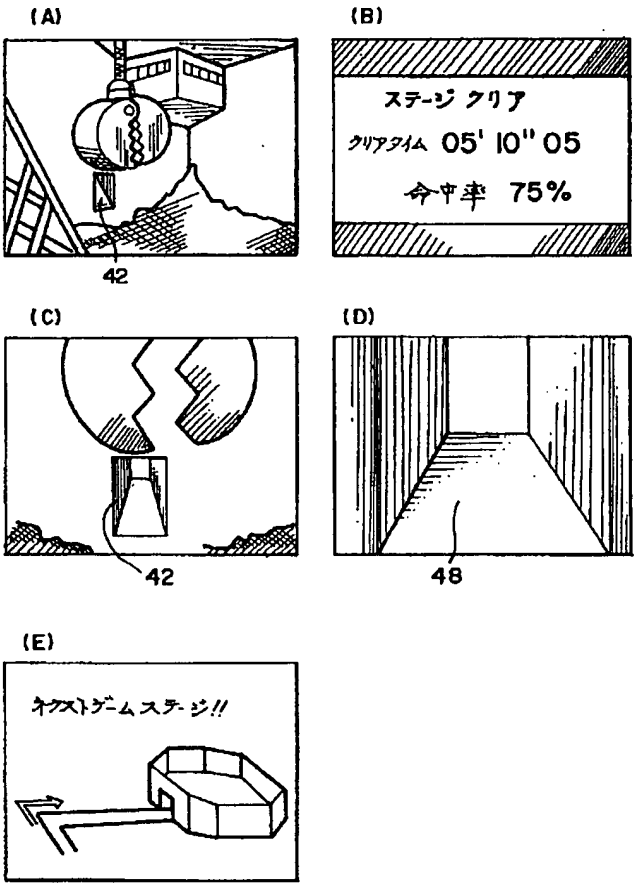
【図３】


スタート
複数の敵の出現とそれに対してのプレーヤの攻撃
S1
クレーンを操縦する敵が発生
S2
クレーンを操縦する敵はクレーンをプレーヤにぶつける攻撃をする
S3
S4
クレーンを操縦する敵を倒した
Y
N
S5
クレーンを操縦する敵が発生して30秒が経過した
N
Y
S6
分岐条件を満たした
S7
クレーンを操縦する敵は消滅するがクレーンは作動したまま
S8
クレーンの誤作動（暴走）
S9
クレーンが壁に激突し壁に穴が空く
S10
分岐条件を満たしていない
S11
クレーンを操縦する敵は逃げる
A

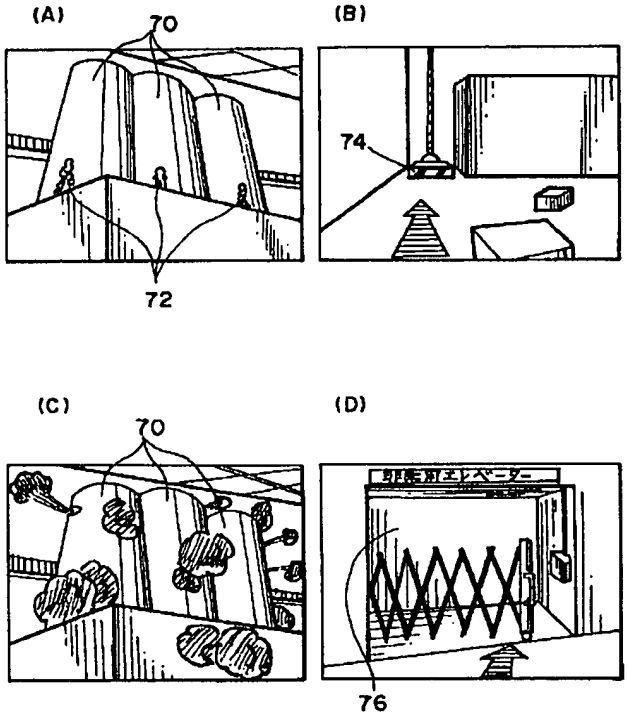
【図４】


A
S12
この部屋内の敵を全滅したか?
N
S13
全滅するまでプレーヤが倒す
Y
S14
ステージ クリア処理(クリアタイム,命中率などの表示)
S15
分岐条件を満たしたか?
Y
N
S19
このゴミ捨て場の出口へ自動的に移動する
S16
穴の空いた場所へ自動的に移動する
S20
ゴミ捨て場の出口の向こうにある次のゲームステージ24-3のデータを読み込む
S17
穴の空いた向こうにある次のゲームステージ24-2のデータを読み込む
S21
次のゲームステージ24-3へ
S18
次のゲームステージ24-2へ

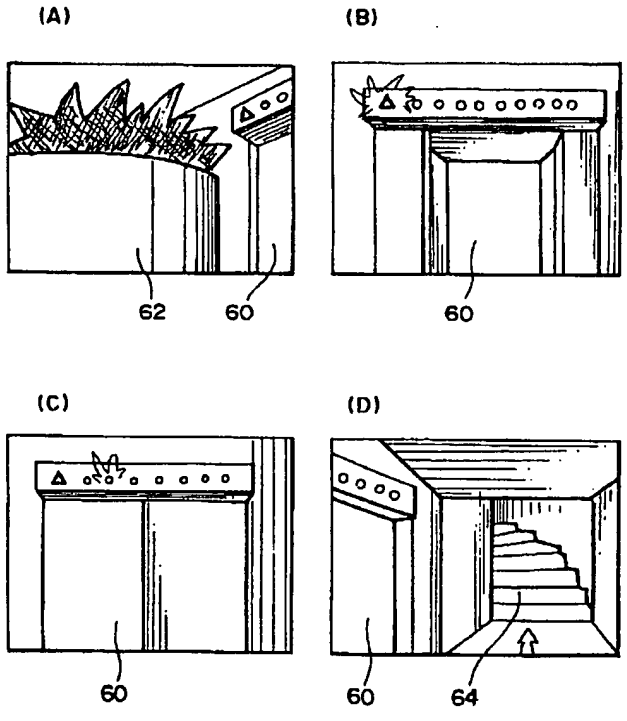
【図６】



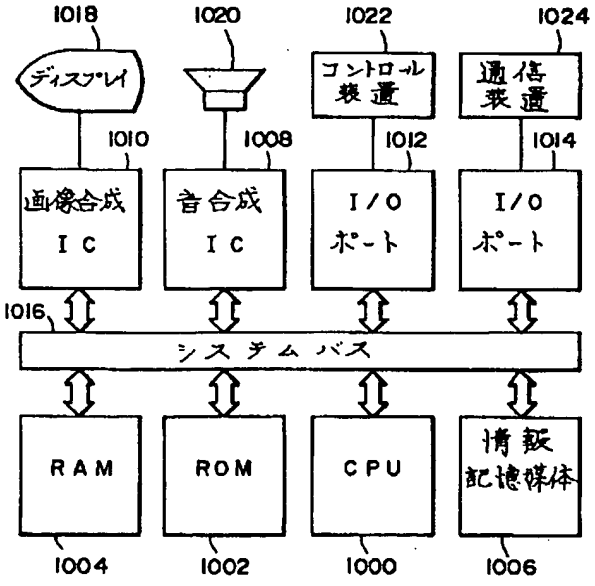
【図１３】



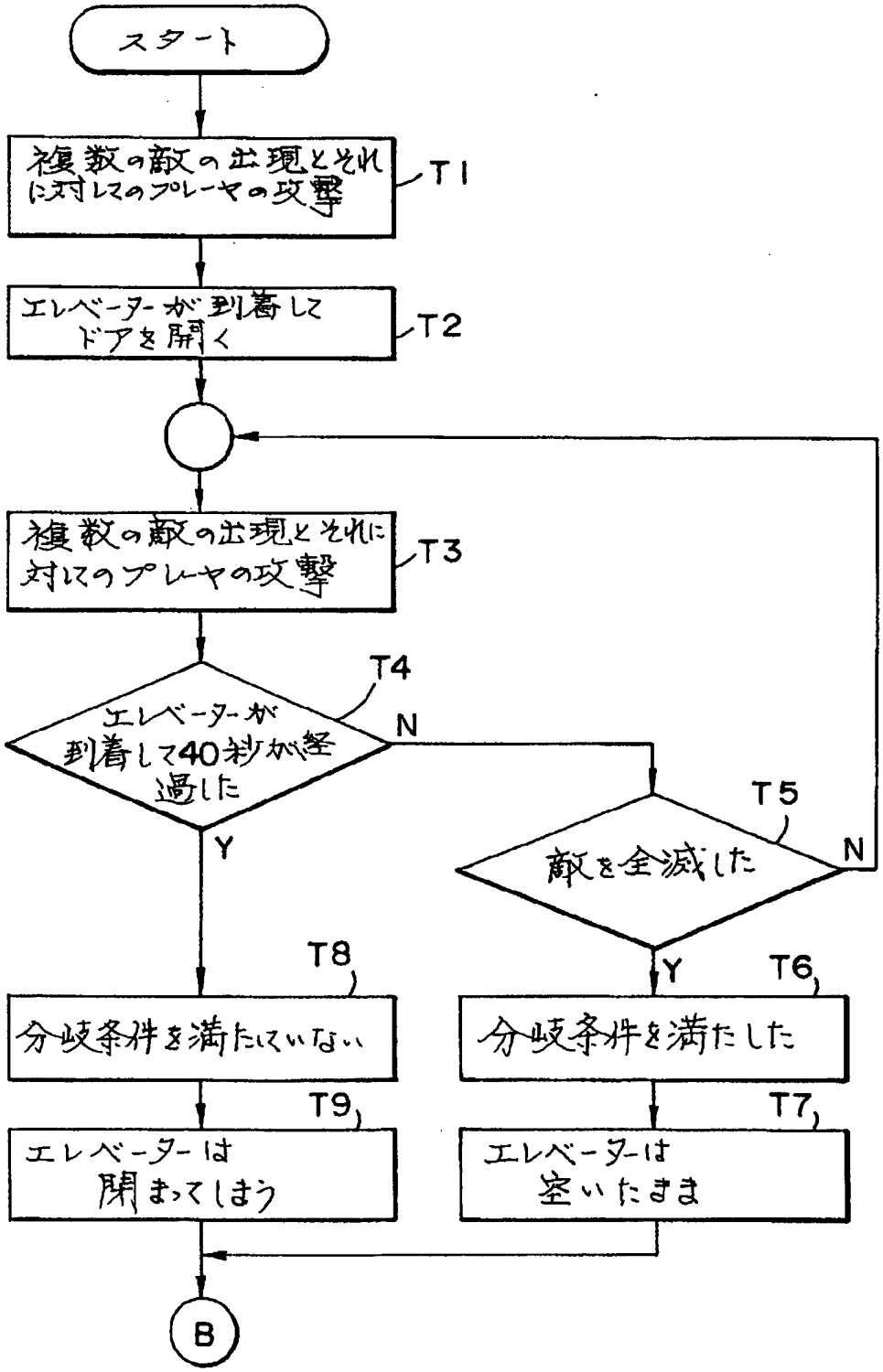
【図１０】



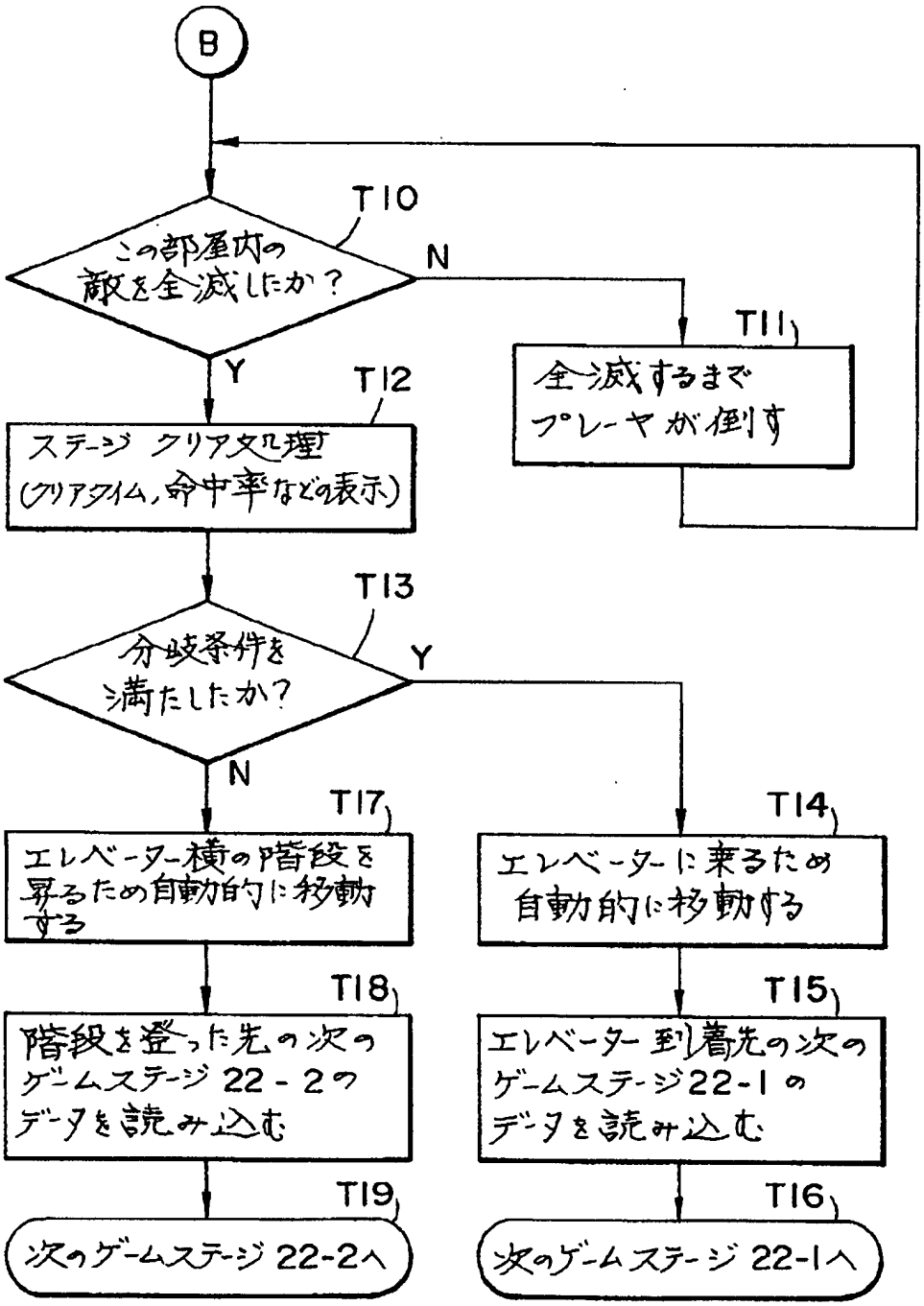
【図１４】



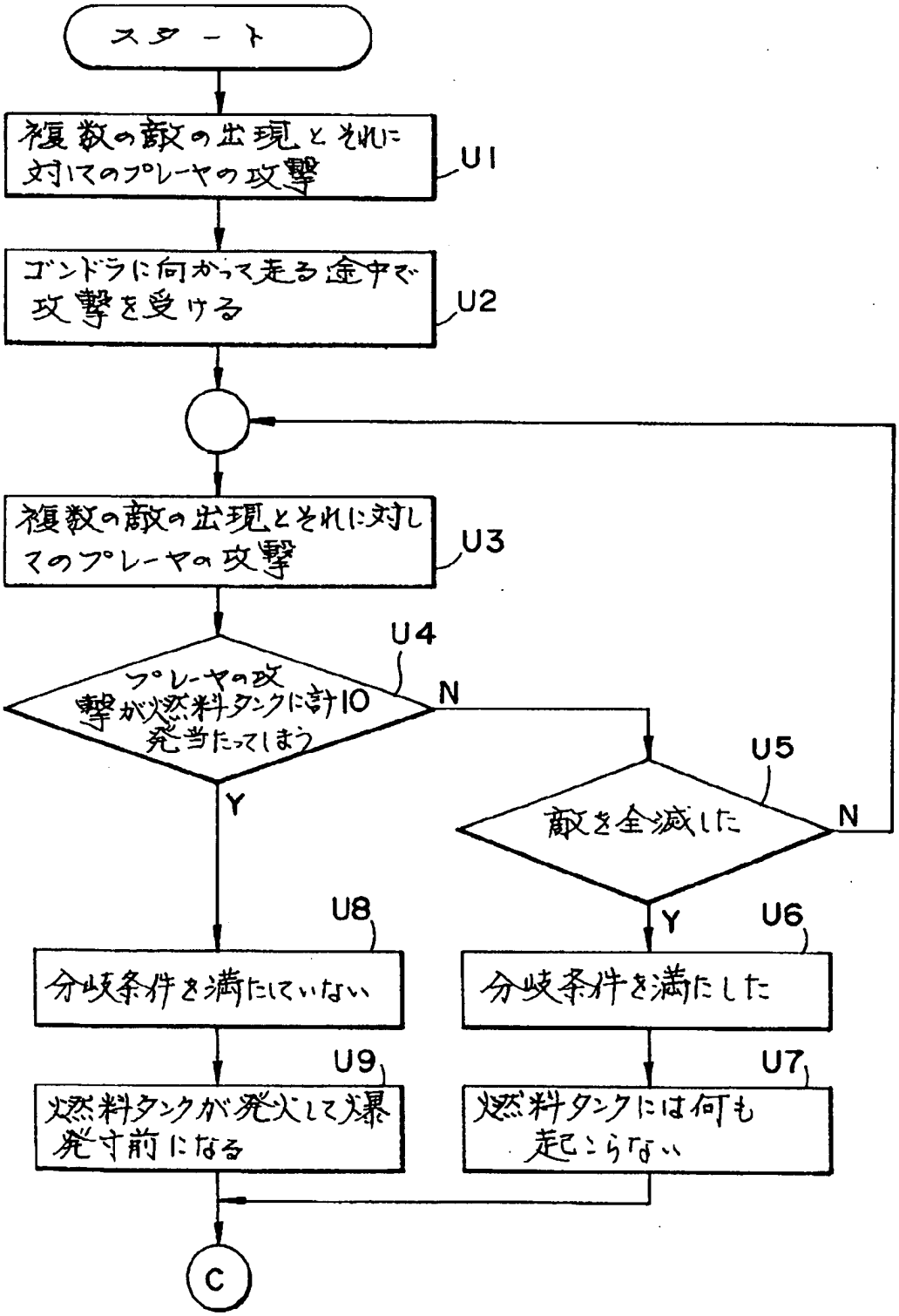
【図8】


スタート
複数の敵の出現とそれに対してのプレーヤの攻撃
T1
エレベーターが到着してドアを開く
T2
複数の敵の出現とそれに対してのプレーヤの攻撃
T3
T4
エレベーターが到着して40秒が経過した
N
Y
T5
敵を全滅した
N
Y
T8
分岐条件を満たしていない
T6
分岐条件を満たした
T9
エレベーターは閉まってしまう
T7
エレベーターは空いたまま
B

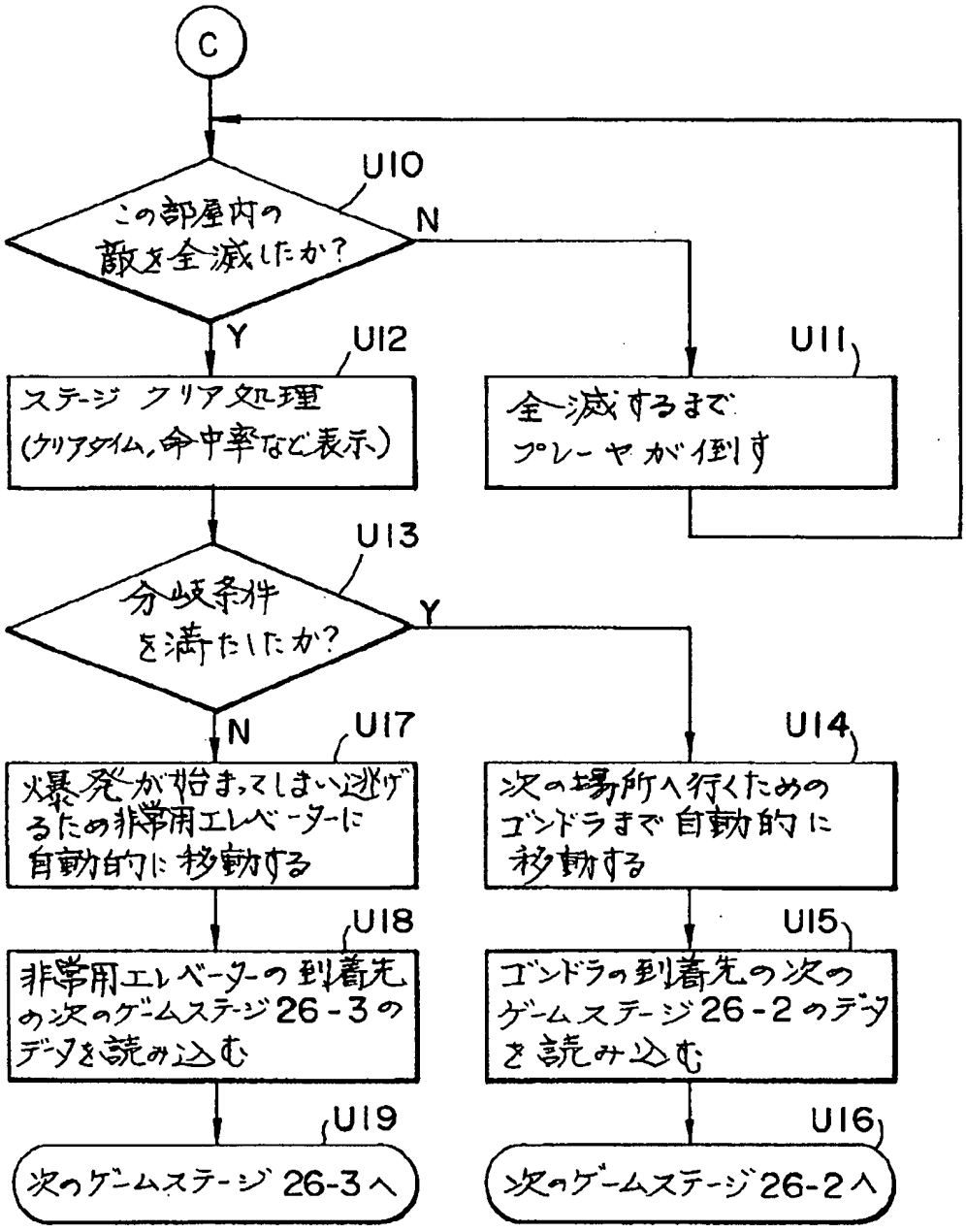
【図９】


B
T10
この部屋内の敵を全滅したか？
N
Y
T11
全滅するまでプレーヤが倒す
T12
ステージ クリア処理
(クリアタイム，命中率などの表示)
T13
分岐条件を満たしたか？
Y
N
T17
エレベーター横の階段を昇るため自動的に移動する
T14
エレベーターに乗るため自動的に移動する
T18
階段を登った先の次のゲームステージ 22－2のデータを読み込む
T15
エレベーター到着先の次のゲームステージ22-1のデータを読み込む
T19
次のゲームステージ 22-2へ
T16
次のゲームステージ 22-1へ

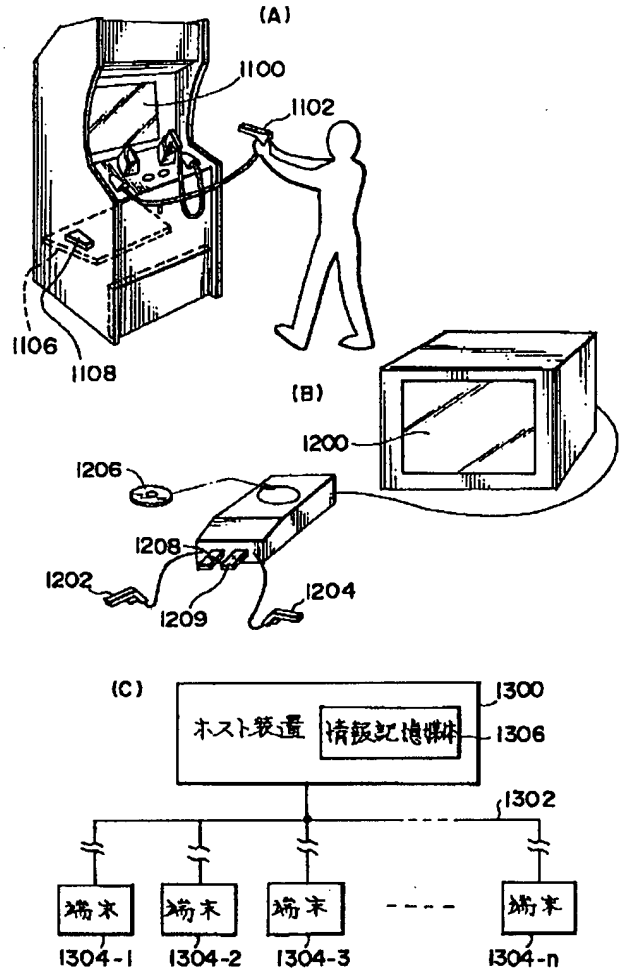
【図１１】


スタート
複数の敵の出現とそれに対してのプレーヤの攻撃
U1
ゴンドラに向かって走る途中で攻撃を受ける
U2
複数の敵の出現とそれに対してのプレーヤの攻撃
U3
U4
プレーヤの攻撃が燃料タンクに計10発当たってしまう
N
Y
U5
敵を全滅した
N
Y
U8
分岐条件を満たしていない
U6
分岐条件を満たした
U9
燃料タンクが発火して爆発寸前になる
U7
燃料タンクには何も起こらない
C

【図12】


C
U10
この部屋内の敵を全滅したか?
N
Y
U12
ステージ クリア処理 (クリアタイム,命中率など表示)
U11
全滅するまでプレーヤが倒す
U13
分岐条件を満たしたか?
Y
N
U17
爆発が始まってしまい逃げるため非常用エレベーターに自動的に移動する
U14
次の場所へ行くためのゴンドラまで自動的に移動する
U18
非常用エレベーターの到着先の次のゲームステージ26-3のデータを読み込む
U15
ゴンドラの到着先の次のゲームステージ26-2のデータを読み込む
U19
次のゲームステージ26-3へ
U16
次のゲームステージ26-2へ

【図１５】



【図１６】

情報記憶媒体

プログラム群
○基本ゲーム処理プログラム
○分岐処理プログラム 　分岐イベント発生・制御プログラム 　分岐条件判定プログラム 　自動進行処理プログラム 　次ステージデータ読み込みプログラム
○画像合成プログラム
⋮
データ群
○画像データ
○音データ
○分岐イベント用データ
○分岐判定用データ
○自動進行処理用データ
⋮